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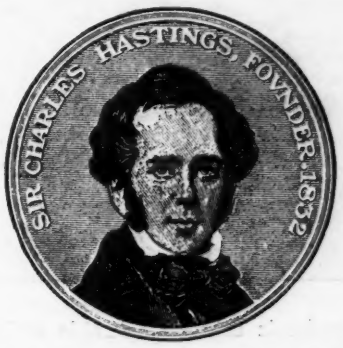

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Observations

ON

THE AETIOLOGY AND SYMPTOMATOLOGY OF DISSEMINATED SCLEROSIS*

BY

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Those who open discussions such as this are expected to review the past history of their subject, to give an account of the present state of our knowledge, and to indicate the lines along which advances may be made. On this occasion, however, such an introduction may be omitted, as the subject of disseminated sclerosis in all its aspects has recently been discussed by Russell Brain[1] in an admirable review. For the purposes of this contribution two groups of cases have been studied: seventy cases of acute retrobulbar neuritis seen at the Royal London Ophthalmic Hospital and 118 cases of established disseminated sclerosis seen elsewhere. The numbers are small, but their value, compared with that of larger series made up of cases collected from the literature, is increased by the fact that the patients were examined in circumstances allowing for a full investigation on a uniform plan. The results will be discussed in the order adopted by Russell Brain; where comparisons are made with the findings of others his review is the main source of my information.

AETIOLOGICAL FACTORS

The statement attributed to Guillain that disseminated sclerosis is, after syphilis, the most frequent disease of the nervous system, will be affirmed by all neurologists in this country. Indeed, most of them would go further and say that, though syphilis still holds the lead in hospital practice, in private practice disseminated sclerosis is by far the more frequent. Statistics compiled in the United States and in Switzerland show a preponderance in urban dwellers. A study of the occupations of the patients forming this series provides no evidence for the recorded beliefs that agriculturists, woodworkers, ironworkers, or persons whose work brings them in contact with water, are particularly susceptible. Although it is now recognized that many of the reported cases of hereditary and familial disseminated sclerosis were examples of other disorders, it is certain that genuine familial cases do occur. There is one example in this series—two young sisters whose characteristic history and present condition leave little room for doubt about the diagnosis.

It is usually stated that males are more often affected than females in a proportion of 3 to 2; in this series 58 per cent. were females. This agrees with Bing's and Reese's figures (281 cases) for North Switzerland, but is a complete reversal of the proportions given by Wechsler and several others, based on very large numbers of collected cases. Fresh statistics on this point and on other differences in the manifestations of the disease in different countries would provide interesting and, possibly, important information. Much attention has been given to various alleged precipitating factors, but no general agreement has been reached, nor have numerous attempts to isolate a specific organism or to transmit the disease experimentally had any success. Despite much labour, even the pathological nature of the lesions is still in doubt. Of the "cause" of the disease nothing is known. Of its clinical manifestations, however, our knowledge has increased rapidly, and is still increasing. Thirty years ago the disease was characterized by nystagmus, intention tremor, and scanning speech; now it is one in which all of these signs are commonly absent, but almost any conceivable sign or symptom of interference with the functions of any part of the central nervous system may occur.

ONSET AND EARLY SYMPTOMS

According to Russell Brain the modern tendency has been to emphasize the frequency of an insidious onset. Souques, for example, found that it was insidious or slow in 73 per cent. of the cases. Many of us, if we were asked to express an opinion, would say that the onset was almost always sudden. As so frequently happens when experienced observers seem to differ in discussions, the discrepancy is due to failure of the disputants to define the terms they use. If the onset of the disease is the appearance of the first symptom, then it is always sudden. But if onset refers to the time when the disease has become firmly established, then the onset is almost always slow.

Guillain gave paraesthesiae, transitory ocular troubles, and fatigability of gait as the earliest symptoms. Bohmig gives the following order of frequency for the incidence of the earliest symptoms: disturbances of gait, paraesthesiae, sphincter disturbances, giddiness, diplopia, pain and weakness in the back, disturbances of speech, abnormalities in the upper extremities, and facial weakness. In view of what will be said later about the frequency of acute retrobulbar neuritis as the first manifestation, it is remarkable that amblyopia is not mentioned in this table.

As patients often use the expression "numbness" and "dead feelings" to refer to troubles that are purely motor, or say that a limb is weak, useless, or paralysed when the defects are sensory in origin, no attempt has been made here to distinguish between the causes of historical disabilities in the limbs. Where a monosymptomatic onset was clearly remembered the order of frequency of incidence of the first symptom was: transitory ocular troubles (amblyopia, diplopia, etc.), 40 per cent.; transitory or variable motor or sensory disturbances in one or both lower limbs (weakness, unsteadiness, abnormal sensations), 30 per cent.; the same in one or both upper limbs (uselessness, weakness, abnormal sensations), 6 per cent.; the same in homolateral leg and arm, 5 per cent.; severe attacks of vertigo (with or without repeated vomiting), 4 per cent.; numbness of one-half of the face, 3 per cent. The reason for the high incidence of visual troubles in this list will be discussed later. Bias due to special circumstances has been eliminated by the exclusion of all cases referred by ophthalmic surgeons.

All writers emphasize the importance for diagnosis of a history of relapses or remissions. The course was discontinuous in every case in this series. This suggests that a steadily progressive course is rare. Defective memory on the part of the patients or the omission of questions designed to revive it or to elicit a history of one or more of the numerous characteristic early symptoms—perhaps well remembered by the patient, but thought by him to have no bearing on his present troubles—account for most of the alleged steadily progressive cases.

AGE OF ONSET

The following table gives the age of onset (appearance of the first symptom) in decades in 107 cases in which the evidence appeared to be trustworthy.

Age at Onset	11-20	21-30	31-40	41-50	51-60
Percentage of total	10.3	45.8	28.7	15.9	1.1

It will be seen that the age of onset is in the third or fourth decade in 74.5 per cent. of the cases.

[3752]

* Read in opening a discussion in the Section of Neurology at the Centenary Meeting of the British Medical Association, London, 1932.

The earliest age at onset was 12 years. This patient (a girl), now an advanced case, was taken to an ophthalmologist at the age of 12 with sudden loss of the sight of one eye ; the diagnosis was optic neuritis, and vision was restored in a few weeks. Of another female patient, now 30 years old, the mother relates that at the age of 13 the child had to stay away from school for six months because she dragged one leg, and when it recovered the arm went wrong. A careful scrutiny of the notes on nine cases with onset after 45 suggests that some of them should have been excluded from the table. The rule that the first symptom of disseminated sclerosis rarely appears after the age of 45 is still a good one. Disseminated sclerosis in the aged will be discussed by Dr. Ferguson. He will probably find that it is diagnosed too often.

DURATION OF DISEASE AND REMISSIONS

The duration of the disease is said to range from a few months to twenty or thirty years. Of Wechsler's 192 patients only 5 per cent. gave a history of more than five years. Byrom Bramwell found the average duration in thirty-six fatal cases to be seven years and nine months. When the significance of acute retrobulbar neuritis and other characteristic early symptoms is better known a lower figure will be given for the average age at onset and a higher figure for the average duration of the disease. Very long remissions, up to twenty years and more, are not uncommon when acute retrobulbar neuritis is the first symptom, but remissions approaching these in length are not common after other modes of onset. The longest remission in this series, if the history is trustworthy, was thirty-two years. An intelligent woman, now aged 56, with a typical recent history of three years' duration and characteristic physical signs, states that she had "an attack of the same thing" at the age of 21. The legs and one arm went numb ; she walked unsteadily and dragged one leg. She recovered completely in three months, and remained well until the age of 53, when the legs became weak again.

SOME UNCOMMON SYMPTOMS

Many writers have published figures giving the frequency of incidence of different symptoms. Russell Brain reproduces four tables in his review. Agreement cannot be expected, for example, on the incidence of mental changes, pallor of the disks, nystagmus, or intention tremor where so much depends on personal interpretation. In one series position loss was found in 65 per cent., in another series in 17 per cent., in another it is not mentioned. No attempt has been made to analyse my cases on these lines, but reference will be made to some of the less common symptoms. Most neurologists have seen convulsive and apoplectiform onsets. One of my patients with Jacksonian attacks in one arm and gross loss of postural sense in the intervals narrowly missed an operation for cerebral tumour.

Brain considers that the vestibular and vestibulo-pyramidal forms described by French authors are rare, and that undue weight has been given by them to vestibular as opposed to cerebellar disturbances as factors in the production of symptoms. However this may be, acute attacks of vertigo are not uncommon, and they should be better known, as their nature is rarely suspected. Since an inquiry for these attacks has formed part of a routine interrogation of patients in whom the presence of disseminated sclerosis was suspected, a history of them has frequently been obtained. Sometimes vertigo is the only symptom ; repeated vomiting is not uncommon. Sometimes it is accompanied by pain or numbness in the corresponding side of the face or tongue, or by motor or sensory disturbances in the limbs. An attack of true vertigo in a young adult free from ear disease should suggest the presence of disseminated sclerosis.

Of the many abnormal sensations that patients describe a few will be chosen for special mention. Numbness on one side of the face that passes off in a few days or weeks is not very uncommon ; in several of my cases it was an initial symptom, which preceded the appearance of others by as much as five years. It is well known that trigeminal pain exactly like that of tic douloureux may occur. In two cases (Oppenheim, Parker) a plaque was found in the pons at the point of entry of the trigeminal nerve. The neuralgia is not accompanied by objective sensory signs. It can be abolished by alcohol injections (Harris). Russell Brain has seen a case in which "electric shocks" radiated through the body when the patient flexed the cervical spine ; he reports two similar cases. One of my patients said: "I get an electric shock when I bend my neck forward." Another said: "When I bend forward I get a tingling down the legs. I can bring it on at any time by bending my neck." Still another made similar complaints ; and another complained of pain in the neck and up the back of the head on moving the head quickly, and on swallowing. This minor sign is worthy of attention, as it is an addition to the list of the signs that are common to disseminated sclerosis and spinal tumour. At this point it is perhaps worth mentioning that a patient with a history of retrobulbar neuritis and diplopia, who now presents signs of spastic paraplegia, feels severe pain in the distribution of the first lumbar root when he coughs. Beyond mention of severe loss of vibration sense in the lower limbs in patients with little or no impairment of other forms of sensation, no further reference will be made here to objective sensory disturbances.

For the guidance of those who wish to assess the value of new treatments a valuable contribution to this discussion might be made by one who would describe in some detail the remarkable variations in symptoms and signs that occur spontaneously. It would be seen that complete long-standing functional recovery from the severest manifestations occurs, that all physical signs—including extensor plantar responses—may disappear, and that all the subjective and objective improvements that have been recorded as evidence of the efficacy of special treatment are common in the natural course of the disease.

OCULAR SYMPTOMS

To many the word nystagmus at once suggests disseminated sclerosis. Its incidence in this disease is high, but the figures given by different observers vary greatly for obvious reasons. It is necessary for neurologists to reiterate that nystagmus is not always a sign of disease of the nervous system, that its value for the differential diagnosis of organic nervous diseases is limited, that it is frequently absent in disseminated sclerosis—especially in the early stages—and that it is sometimes present in a curable condition which is sometimes mistaken for disseminated sclerosis—namely, spinal tumour. Paresis of an ocular muscle sufficient to cause diplopia is very common, but a squint or a defect so gross that it can be detected by rough tests is very rare. As a working rule it may be said that a persisting gross ocular palsy in a patient otherwise free from symptoms is not due to disseminated sclerosis. Transient diplopia is a common initial symptom ; it may precede all signs and other symptoms by many years. It is surprising how frequently it is forgotten. As a history of genuine diplopia in the past often decides the diagnosis, the leading question should be deferred as long as possible, and care must be exercised before an affirmative statement is accepted, as inquiry often reveals that blurring of print, for example, is what

the patient is referring to. It is advisable to insist on a detailed description of some specific incident. From the statements made a judgement as to credibility can usually be made with certainty.

Alterations in the pupils apart from the transient effects of severe acute retrobulbar neuritis are very rare. The presence of grossly defective pupillary reactions should cause doubt about the diagnosis. The Argyll Robertson phenomenon, if it ever occurs, must be extremely rare. Lesions in the optic nerves, chiasma, and tracts are very common ; but permanent blindness, or even permanent severe loss of vision, is rare. Visual failure may come on insidiously, and pathological pallor of the disks is often found in patients who make no corresponding complaints. Mild transitory attacks of amblyopia are common. In a proportion of cases that is probably much higher than is recognized at present more severe attacks of amblyopia occur early, in which the symptoms are those of acute retrobulbar neuritis.

ACUTE RETROBULBAR NEURITIS

In the 118 cases analysed here a clear history of a severe attack of acute retrobulbar neuritis was obtained in forty-one. In arriving at this figure no account has been taken of a history of " misty vision " where no decisive details could be given. In order to obtain a true idea of the frequency of acute retrobulbar neuritis in disseminated sclerosis all the cases that were referred for defective vision or were in any sense picked cases were eliminated. There then remained eighty patients who came complaining of extraocular symptoms ; twenty-nine of these described an attack of acute retrobulbar neuritis in the past ; in twenty of these it was the first symptom, or rather the first symptom the patient could remember ; and in every instance it was an early symptom—that is, it always appeared during the stage of the disease characterized by premonitory symptoms and remissions. It seems, therefore, as if an attack of acute retrobulbar neuritis rarely occurs after the disease is firmly established. Further evidence on this point would be welcome.

It is well known that an attack of retrobulbar neuritis may precede other symptoms of disseminated sclerosis by many years. In six cases followed up by Fleischer the intervals varied from four to fourteen years. In my cases the intervals varied from a few weeks or months up to 10, 14, 19, 20, and 24 years. The average interval was 6.8 years. An obvious fallacy here is that patients recall so memorable an event as blindness of an eye more readily than other symptoms. While these notes were being written a patient made a second visit after an interval of eight years. At the first interview she gave a history of transient numbness of one limb followed in six months by blindness of one eye. At the second visit she stated confidently that her first symptom was visual, and held to this statement until she was confronted by the earlier note. As with diplopia, so with retrobulbar neuritis, failure to mention it is common, even when the importance of the general questions regarding past visual troubles is emphasized ; and often no account of it is obtained until the leading question is put, when a description of a severe attack is obtained so circumstantial as to leave no room for doubt as to its nature. In three cases the patients themselves had no knowledge of attacks that had occurred in the early teens ; information was obtained from the parents. It is because *ad hoc* inquiries were made in every case that the incidence of acute retrobulbar neuritis recorded here is higher than that usually given.

In many cases, as we shall see later, definite physical signs are already present when a patient free from other subjective symptoms comes to us for failure of vision in one eye. It is certain, however, that retrobulbar neuritis may be not only the first symptom but also the first manifestation of the disease. A man had a definite attack of retrobulbar neuritis at the age of 21. He was perfectly well until the age of 35, when he had transient diplopia ; at this time he was examined by a neurologist who told him he could find no signs of organic disease (the history of the earlier visual trouble was not elicited). At the age of 37 he had difficulty in walking, and examination revealed characteristic signs of disseminated sclerosis. Many similar histories might be given. Fleischer's cases already referred to establish the same point.

It was a surprise on going over the notes of my cases to find that simultaneous affection of both eyes was not recorded once, and that distinct acute attacks in sequence within a month are mentioned only once. In three cases several years (in one case fifteen) elapsed between a first and second attack in the same or the other eye. As a point worthy of discussion it is suggested that simultaneous or early consecutive attacks are very rare, and that their occurrence should suggest some other form of inflammation of the optic nerves such as disseminated encephalomyelitis.

The main purpose of this communication is to keep alive the discussion that has been proceeding spasmodically for forty years or more on the relation of acute retrobulbar neuritis in general to disseminated sclerosis. Reference to standard textbooks will show that further discussion is necessary. In two textbooks of neurology published during the last six years accurate clinical accounts of acute retrobulbar neuritis or " acute axial neuritis " are followed by a long list of causes, but disseminated sclerosis is not among them, and in the accounts of disseminated sclerosis acute retrobulbar neuritis is not named as one of its symptoms. The condition of informed ophthalmological opinion is given in the statement that

> " multiple sclerosis is accepted by all ophthalmic surgeons as a common cause of retrobulbar neuritis, but its incidence is estimated as widely as from about 20 per cent. to about 80 per cent." (Traquair[2]).

Characteristics of Retrobulbar Neuritis

Estimates will vary so long as those who make them are thinking about different things. At present the name retrobulbar neuritis is used indiscriminately when reference is being made to a number of manifestations—usually distinguishable clinically—of the effects of various unrelated pathological processes, the only common feature being that the signs indicate a lesion of the optic nerves. For our present purpose the term will be reserved for cases characterized by (1) acute onset, (2) unilateral incidence, (3) " central " scotoma, and (4) tendency to recovery. We shall do well to confine our attention to the cases that present these distinguishing features. After agreement has been reached on their nature we may safely begin to consider whether other cases should be included in the same category.

Some pain is almost always present at the onset, at rest, on voluntary movement, or on pressure of the eyeball. Visual failure is rapid rather than sudden, and usually reaches its maximum in a few hours or at most in a day or two. Vision is often reduced to a perception of hand movements or even less. The visual defect is always most intense in the central area of the field, but peripheral parts are frequently affected as well. Recovery usually begins within a week or two, and by the end of six weeks or two months is often considered by the patient to be complete, when examination with a small coloured object may reveal a residual defect. It is often

stated that visible changes at the disk in the acute stage are rare. In seventy cases referred to here definite changes were noted by the surgeon in twenty-one. In most instances the report was: disk blurred, distinctly blurred, pinker and less distinct, cloudy, or slight swelling ; in two cases the disk was described as swollen and oedematous, and in three the terms used were papillitis or optic neuritis. The incidence of slight changes is probably higher than these figures indicate, as special attention has not been paid to this point in my records. Certainly the observer should be prepared to meet them frequently. Intense swelling, the typical choked disk, if it occurs at all, is very rare in the unilateral type. It is a common feature in bilateral cases. It is suggested that intense swelling in one or both eyes or bilateral incidence of even mild visible changes with severe visual failure indicates a different aetiology.

Frequency of Retrobulbar Neuritis in Disseminated Sclerosis

Discussion is invited on this point and particularly on the following statements: (1) Disseminated sclerosis is the only known common cause of acute unilateral retrobulbar neuritis as here defined. (2) Apart from certain rare allied acute inflammatory diseases of the nervous system it is the only cause. These statements cannot be proved or disproved ; but if they are accepted as approximating to the truth much will be gained. Clear ideas can then be substituted for the muddled mental state that must exist so long as the incidence of disseminated sclerosis as the cause is variously estimated as " from about 20 per cent. to about 80 per cent.," and we may at last begin to hear less of hypothetical sinus disease and dental or tonsillar sepsis as possible causes. Nothing more can be offered here in support of these statements than evidence that disposes at once of the lower estimate (20 per cent.), but is for the rest indirect. Seventy cases of acute retrobulbar neuritis were examined within a week or two of onset. In 31.3 per cent. the patients were already suffering from disseminated sclerosis ; in 41.8 per cent. the diagnosis " probably disseminated sclerosis " was made ; in the remaining 26.8 per cent. there were no other suspicious symptoms and no definite organic signs.

Where so much depends on intimate knowledge of the numerous early symptoms and on personal interpretations of physical signs, agreement by different observers on the number of cases that fall into these groups cannot be expected. My own opinion is that conclusive historical or physical evidence of the presence of disseminated sclerosis can be obtained in over 30 per cent. of cases of unilateral retrobulbar neuritis in the acute stage, and that the diagnosis can be made with a close approach to certainty in about 50 per cent. What is the fate of the cases in which the cause is uncertain? The answer could be given if we were able to keep in touch with our patients sufficiently long, but this is hardly possible, because, as we have seen, ten, twenty, or more years may pass before other signs or symptoms appear. Fleischer followed up some of his cases and found that 66 per cent. of them developed disseminated sclerosis. Further than this direct evidence does not take us at present.

Significant indirect evidence is obtained by comparing the age of onset and sex incidence in acute uncomplicated cases and in cases of patients with established disseminated sclerosis who give a history of an acute attack of visual failure in one eye as their first symptom. In the first group in 85.8 per cent. and in the second in 86.9 per cent. the acute attack occurred between the ages 21 and 40 ; in the majority in both groups, between 21 and 30. The average age of onset in Traquair's 139 cases of " acute unilateral type " was thirty-two years. Misgivings about the value of these figures arising from a consideration of the proportion of the population living at these ages may be set at rest by a comparison of the sex incidence in the groups just named. The facts may be set forth as follows: acute unilateral retrobulbar neuritis, uncomplicated, 64.7 per cent. females ; history of unilateral retrobulbar neuritis as first symptom in patients with disseminated sclerosis, 63.7 per cent. females ; all cases of established disseminated sclerosis, 58 per cent. females.

Traquair found that 65 per cent. of his cases of the " acute unilateral type " of retrobulbar neuritis were females. This agreement in age at onset and sex preponderance in females in the two groups is remarkable, and it is suggested that it indicates a common cause. As 65 per cent. of the patients with established disseminated sclerosis who gave a history of acute retrobulbar neuritis at any stage in the course of the disease were females, another conclusion seems to be justified—namely, that females are more susceptible to it than males, and that in them it is more often the first manifestation of the disease. It is to be hoped that the ensuing discussion will lead to some advance in our knowledge of the aetiology of acute retrobulbar neuritis ; the subject is one wherein the profession is in great need of guidance.

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ADAMANTINOMA OF THE TIBIA: AETIOLOGY AND PATHOGENESIS*

BY

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(*With Special Plate*)

Extra-alveolar adamantinomata have been infrequently reported. Those occurring at the base of the skull and in relation to the pituitary gland are well recognized, and their origin is satisfactorily explained on embryological grounds.[1] So far as I know the only other extra-alveolar adamantinomata are the very infrequently described adamantinomata of the tibia. Besides the case to be described I know of only two recorded cases—that of Fischer[2] and that of Baker and Hawksley.[3]

These cases of adamantinoma of tibia are so similar as to indicate that we are dealing with a rather clear-cut, if rare, clinical and pathological entity. In each case there is a history of trauma ; in each case the trauma is slight so far as surface injury is concerned ; in each case this trauma is followed by a tumour after a latent period; in the two recent cases at least there is evidence suggesting that during the latent period some local lesion persisted ; in each case the tumour is one of the bone and periosteum and not of the soft parts. The histology of the tumour is the same in all cases, being that of certain types of adamantinoma, basal-celled carcinoma, or rodent ulcer, a structure which possibly justifies the diagnosis of adamantinoma. To this list of similarities one may add the tendency to local recurrence. While the interest of these cases lies partly in their clinical significance and their morphological diagnosis, their chief interest to the pathologist lies in the realm of aetiology and pathogenesis, and in the hope that the study of a rare lesion may throw light on wider problems.

* Paper read in the Section of Pathology at the Centenary Meeting of the British Medical Association, London, 1932.

THREE REPORTED CASES

In 1913 Fischer[2] reported a primary epithelial tumour of the tibia. He outlined the clinical history and gave an elaborate account of the morphology, diagnosing the tumour, apparently with some trepidation, as an adamantinoma of the tibia. The diagnosis in his case, as in the other cases, seems to be justified perhaps just in so far as tumour diagnosis is adequately based in morphology. His case was that of a male, aged 37, who slipped and knocked his leg on a stair. The injured part was injected and painful, but the description does not suggest a very gross injury. Five months later a tumour was observed at the site of the injury, and nine months after trauma the tumour area was resected. On this resected bone Fischer's diagnosis was made. His description leaves no doubt but that the tumour was one of bone and periosteum and not of the superficial soft parts.

Baker and Hawksley's case[3] was reported in 1931, and I am greatly indebted to these authors for the opportunity to examine their very beautiful preparations, and to compare them with my own material. Their case was that of an engine driver, aged 46 at the time of examination. He struck his left shin with an iron bar. The injury appears not to have been a gross one, and there was no skin wound. Slight injuries to the same region seven and eight and a half months later were associated with much pain, pointing to some persistence of a lesion at the site, and ten months after the first trauma a subperiosteal resection of the tumour then present supplied the material for diagnosis. Again the tumour was in the bone.

Very similar is the clinical history of my own case. It differs from the others only in the peculiarly long latent period. For the opportunity to study the case I am indebted to Dr. C. C. Elliott of Capetown, who has taken a lively interest in its clinical and pathological aspects. In 1915 the patient, then aged 36, was kicked on the shin. Only superficial bruising resulted. The whole thing healed up promptly so that there was nothing to show, although pain or tenderness was never entirely absent thereafter. In 1923, eight years later, a swelling developed fairly rapidly. This was apparently looked on as a bone sarcoma, and amputation was advised. The patient refused amputation, and nothing was done until he again sought medical help in 1931, sixteen years after the injury. A very definite tumour was then present. Following *x*-ray examination the tumour area was scraped out, and on the histological examination of the material so obtained the diagnosis of adamantinoma of tibia was made. Six months later, in October, 1931, the tumour recurred and grew rapidly, causing so much pain that amputation was done at the patient's request. Fig. 1 shows the *x*-ray picture of the original tumour; Fig. 2 the gross section of the bone. The evidence is of a slowly growing tumour originating in periosteum or bone. Even in the recurrence the tumour appeared to be confined to bone, and examination of many sections of the skin and superficial soft tissues failed to reveal any tumour. Histological examination of the recurrent tumour raised points of some interest. The differentiation of the tumour towards an adamantinoma-like structure was less complete. In large areas the cells were chiefly spindle-shaped; there were very numerous mitotic figures. Examination of these small parts of the tumour might very well have resulted in a diagnosis of spindle-celled sarcoma or myxosarcoma. After the trauma of operation there seems to have been a shift towards a structure more suggestive of malignancy, but still the soft parts did not become invaded. Figs. 3 and 4 illustrate the appearances, and leave no doubt of the identity of the tumour with those previously described and illustrated.

We may accept it that these are primary epithelial tumours of the skin—adamantinomata if we like. We have a uniform type of tumour associated with a very characteristic and uniform type of clinical history, of which the outstanding features are trauma in the shin region, persistence of some local reaction or lesion of slight degree, and then, after a period, the emergence of a tumour of characteristic morphological and biological features.

KEY TO ILLUSTRATIONS ON SPECIAL PLATE

FIG. 1.—Radiograph of adamantinoma of tibia—a well-defined cystic tumour in the shaft of the bone; it is of slow growth, with considerable sclerosis.

FIG. 2.—Gross specimen; a cystic adamantinoma of tibia.

FIG. 3.—Histological structure of the growth before recurrence. The similarity to the developing tooth germ, to the previously published adamantinoma of tibia, and to a rodent ulcer is obvious.

FIG. 4.—Sarcoma-like structure of part of the recurrent growth.

[*Figs. 5 to 15 are taken from the traumatic rodent described in the text.*]

FIG. 5.—Implantation dermoid in the injured area.

FIG. 6.—Giant-cell absorption of injured tissue in the area. Below, note part of the tumour quite similar to the adamantinoma.

FIG. 7.—Area similar to Fig. 6, but showing a bud of proliferating epithelium like the tumour.

FIG. 8.—More massive tumour-like proliferation from a piece of isolated epithelial tissue. In serial sections this could be traced for a considerable distance, and was definitely tumour.

[*Figs. 9 to 11 are selected sections taken in order from a group of serial sections of the tissue.*]

FIG. 9.—Above is surface skin epithelium, and below an apparently isolated epithelial mass. In both parts there is some budding of epithelium.

FIG. 10.—Shows that this deep mass is linked up with the surface by proliferated epithelium, apparently along the line of the original hair follicle. On either side of this proliferated tissue note buds of tumour.

FIG. 11.—Shows part of the epithelial mass entirely embedded in such proliferated cells forming tumour.

[*Figs. 12 to 15 are similarly selected sections in order from similar sections of the area.*]

FIG. 12.—Below, isolated hair follicle tissue; above, tumour.

FIG. 13.—Later section showing these approximating.

FIG. 14.—Later section showing that the apparently isolated epithelium is linked up and closely related to the tumour.

FIG. 15.—Still later section showing this linking up, producing a picture like that seen in Fig. 10.

AETIOLOGY—FOETAL CELL REST OR TRAUMA?

Obviously the first question is "Whence came the epithelium in which the tumour originated?" Was it a foetal cell rest or was it an acquired implant dating from the trauma? Fischer definitely accepted the first view. He considered that the whole surface epithelium had originally multiple potentialities, including the potentiality of tooth-germ formation. This potentiality, however, was limited to that period of foetal life during which the tooth germs were forming. Only epithelial germs or rests isolated at this period would have the potentiality of tooth-germ formation or, in tumour terms, adamantinoma formation. With further differentiation of the body this potentiality of the epithelium was lost, and later sequestrations or cell rests would not have this potentiality. Accepting this, it follows that the germ rest from which our tumour arose must have dated from foetal life, from the time of tooth-germ formation indeed, and could not have been an implant of adult life. To quote Fischer: "The normal epithelium of the adult skin bears no other actual developmental potentiality than that of forming horny pavement epithelium. If the tumour arose as the result of the deposit of an epithelial germ (that is, adult deposit or implantation) then of necessity the tumour should illustrate the actual structure of pavement epithelium." To Fischer, then, the adamantinoma structure of the tumour indicated its origin in a cell rest dating from that period of foetal life during which the normal tooth germs were forming. After discarding ideas of metastatic and teratomatous origin he says:

"Hence there remains only the assumption that this germ was formed at the site during the intrauterine period, and to this assumption I would give preference above all other views which may be advanced as an explanation of our tumour."

Fischer goes with great fullness into this problem of aetiology, and it is very interesting in reading his paper to-day to see how strongly he was influenced by what was perhaps an imperfect interpretation of Cohnheim's theory, and also by the then current ideas of cell specificity. He practically ignored the history of trauma as of aetiological interest, saying only "perhaps also the trauma which was advanced in the clinical history contributed towards more rapid growth of the epithelial germ." But since Fischer wrote in 1913 our views of tumour growth have widened considerably. Cohnheim's cell rests have a smaller if better defined place in our aetiology, and we are less sure about cell specificity. In the light—or shade—of such theories, and with only one case available for study, it was perhaps reasonable to take Fischer's view of the trauma; but I do not think that to-day we can lightly put aside as of no aetiological significance a fact so prominent and constant in all the cases as this one of trauma.

Drs. Baker and Hawksley deal chiefly with the clinical and histological aspects, and do not attempt to discuss at length the aetiology and pathogenesis. They follow Fischer in postulating a foetal epithelial rest, but lay a little more stress on the trauma as stimulating this rest into growth. They say: "The epithelium must almost certainly have been subperiosteal from embryonic life. . . . The epithelium presumably remained of primitive basal-celled type, stimulated into tumour growth by the first injury." One must confess to a dislike of hypothetical foetal cell rests in positions where they are not adequately explained on embryological grounds, but if we are to discard this relatively simple explanation of the tumours we must replace it with an explanation which takes account of the constant clinical history, the peculiar site and constant structure of the tumours, and an explanation which is in accord with present ideas of the relation of neoplasia to other pathological processes.

POSSIBILITIES OF EPITHELIAL IMPLANT

The alternative view would seem to be that the tumour originated from epithelium implanted at the time of the trauma. When we recall the relative slightness of the trauma without breach of skin surface it is perhaps difficult to imagine any traumatic implantation of epithelium, least of all an implantation into the bone. That would seem to require a very considerable trauma, but how else can we explain the localization of the tumour in the bone in each case? Perhaps one might imagine that, apart from surface laceration, epithelial cells could become sequestrated by a traumatic breaking up of the deep germinal layers of epithelium, the surface remaining intact. I have taken opportunities to study bruises in human and animal tissues, and have not seen any such breaking up of the Malpighian layer or isolation of its cells. One must admit that if such could occur the shin region would be one of the most likely sites, but even so, the known fate of traumatic or experimental epithelial implants scarcely favours the view that such isolated cells could give rise to this very specific type of tumour. That such sequestrated cells should remain latent in the tissues for eight years as in our case presents us with a problem more perplexing than the problem of our tumour. I think, however, that we can so modify this conception of the traumatic origin of the tumour that it will take into account the clinical history of trauma and subsequent persistent pain, explain the special situation and structure of the tumours, and give as reasonable an account of these as we can of most tumours.

The outstanding anatomical feature of the part under consideration is the superficial position of its hard, heavy bone, and especially of its sharp anterior edge. This gives to injuries in this region their peculiar character, and the persistence of hard swelling and pain in this region long after injuries which have not broken the skin is common experience. The conditions are such as to favour laceration of the periosteum and haematoma formation, with subsequent ossification. Another feature of interest is that the skin, freely movable in the lateral direction across the tibia, is not so freely movable over the bone in the longitudinal direction. The type of injury in our cases—a kick, or a fall on a stair—is a shearing injury in this long axis of the limb tending to drag the soft tissues over the superficial bone, tearing the tissues and their anchorage to the periosteum. There can therefore be considerable laceration of the subcutaneous tissues, skin appendages, and periosteum without breach of the skin surface, and it is this dragging, with consequent deep laceration, rather than the surface injury, that is the peculiar feature of trauma in this region, entailing as it does subcutaneous and periosteal haemorrhage, a long process of organization and ossification, and therefore prolonged tenderness and swelling.

"THWARTED REPAIR" THEORY

Can epithelial cells or tissues become sequestrated in such injury, and, if so, what will their fate be in this special environment of prolonged growth and ossification? The injury described will involve tearing not only the connective tissues, but the deep skin appendages such as the hair follicles, and it is in the subsequent fate of these special epithelial tissues in this special environment of tissue repair that we must look for the explanation of our tumours. Their fate will depend on many factors, such as the nature and extent of the injury, the extent of interference with blood supply and lymphatic drainage, the degree of disorganization of the isolated epithelial tissue, and the environment in which the now isolated epithelium is placed. Such hair follicle tissue may simply be absorbed, or again it may become the basis of regenerative growth and repair. In the superficial soft tissues either absorption or repair is likely to be completed, but in the deeper part—in the region of lacerated periosteum and of the organizing and ossifying haematoma related to it—the conditions are peculiar. There, with the longer evolution of inflammatory and reparative processes, we can picture conditions which constantly thwart complete repair, and yet, from tissue activity, tissue destruction, or tissue growth, as constantly supply the chemical or biological environment for continued attempted reparative growth.

We may have difficulty in understanding how thwarted reparative growth at the edge of a chronic ulcer passes over into neoplastic growth, but we know that it does, and it has at least that degree of apparent reasonableness that comes from familiarity. We may have difficulty in understanding how thwarted hyperplasia in liver cirrhosis passes over into neoplasia, but we appreciate the significance of this in the aetiology and pathogenesis of carcinoma of the liver. Similarly, the reasonable explanation of adamantinoma of tibia appears to be that in the region of the ossifying haematoma thwarted repair ultimately passes over into tumour growth. That the exact reaction or environment necessary to maintain a growth stimulus and yet prevent repair will rarely arise, and then only by the fortuitous coincidence of many factors, fits in with the rarity of these tumours. The special features of the tibia region, which we have referred to, account for the fact that the few recorded cases have occurred there. The theory takes into account the constant clinical features of trauma and subsequent pain or tenderness. It does away with the necessity for postulating foetal cell rests in unlikely places or of picturing implanted cells remaining latent and inactive in the tissues for years. It removes the tumour from the position of a very mysterious and isolated entity into the great group of tumours which have chronic irritation as a big factor in their aetiology.

This view also accounts up to a point for the other peculiarity of these tumours—namely, their position only in the bone, or rather in the invaded bone and the old ossified haematoma, now incorporated with the bone. But once neoplasia was established and the tumour, which had so originated in the bone, had gained the power of recurring in the bone and invading new bone, why did it not invade the soft parts? Was the malignancy of the tumour in some way conditioned by its environment? All tumours of this basal-cell type have a limited kind of malignancy, with little ability to invade new types of tissue, and our tumour is not exceptional. What is it that limits the direct extension of such tumours? Is the

malignancy an endowment of the tumour cell itself, or is it a potentiality of the cell, only to be manifested in a certain environment? May it not be that the isolated cell does not contain the whole elusive secret of malignancy? These questions arise whatever view we take of the aetiology of the adamantinoma of tibia.

ITS FURTHER EXAMINATION

There is one other possible view of these tumours which should perhaps be referred to. Should we look on these rare tumours as arising certainly from trauma, but as a peculiar response to trauma in persons congenitally predisposed to such reactions? One thinks of individual and racial peculiarities of response seen in traumatic keloids or in the occasional response to trauma by production of lipomata. This would not alter the general view of the origin of the tumours in aberrant repair, but would account for that aberrance by a congenital and general peculiarity of tissue reactivity instead of by an acquired and local one. It seems unnecessary to assume such a view, although it is, of course, very difficult to exclude such intangible factors in aetiology.

If our theory be correct it raises interesting points about the relation of trauma and tumour, and suggests that some other cases of epithelioma following trauma may be explained similarly. The following case of post-traumatic epithelioma gives interesting confirmation of the views put forward.

A European male, aged 59, presented himself at hospital with an ulcerated area the size of a threepenny piece on the left side of the neck over the upper end of the sterno-mastoid, about an inch below and behind the angle of the mandible. The area was excised and the tissue showed the histological structure of rodent ulcer. His story was that in January, 1932, five months previously, he had cut his neck while shaving, and the cut failed to heal. At the site there developed a scab which frequently broke off, and the ulcer gradually increased in size. Prior to the cut there was, he says, no sore there. Further study of serial sections of the tumour showed that it was growing in an environment of persisting tissue absorption and irregular repair. Sections showed a small sequestration dermoid as one manifestation of aberrant repair, areas of giant-cell absorption, of hair follicles and hairs, and also tumour growth indistinguishable in parts from regenerative growth of hair follicles. Figs. 5 to 15 illustrate these points and make description unnecessary. It is demonstrable that this tumour arose on a basis of aberrant regeneration of hair follicles, and the study of this tumour goes to support the view of aetiology and pathogenesis put forward for the adamantinoma. The picture is exceedingly like the adamantinoma, and had this tumour been growing in the tibia we should have been strongly tempted to call it adamantinoma.

This raises the question of whether or not the diagnosis of adamantinoma of tibia is justified. The gross characteristics of adamantinoma of the jaw appear in our tumour but not in Fischer's. Perhaps the limitation of the tumour to the bone is a feature justifying the diagnosis. In any case both tumours are best considered of basal-cell carcinoma of traumatic origin, having their basis not in congenital cell rests, but in the passage of a constantly frustrated reparative hyperplasia into neoplasia, in a special environment of tissue reaction. This view of the aetiology and pathogenesis of the adamantinomata of tibia is further satisfying in that the neoplasia is brought into relationship with other types of pathological growth in inflammation and repair. The most promising feature of the cancer problem to-day is the growing tendency to bring the pathology of tumour growth back into relationship with the rest of general pathology, from which it was too long isolated as something peculiar and apart in a distorting mist of theories.

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DISPLACEMENT OF THE UPPER FEMORAL EPIPHYSIS

REPORT ON TWENTY-THREE CASES

BY

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LIVERPOOL

(With Special Plate)

This paper is based upon the study of twenty-three cases of displacement of the upper femoral epiphysis. Of these, thirteen were under observation long enough to make it possible to consider the results obtained by treatment, while ten were recent. No cases were recorded in which the history and radiographs did not definitely establish the diagnosis. An instance of the difficulty of diagnosis is that of W. R. (Figs. 1 and 2 on Plate), in which the history and the second radiograph appear to be typical of "slipped epiphysis," but which the earlier radiograph proves to have been a fracture of the neck of the femur—a rare injury in adolescence. In persons over the age of 25 it is often impossible to distinguish radiographically between old cases of "slipped epiphysis" and old cases of Perthes's disease. Such cases were excluded.

Both from the history and from the radiographic appearances it was possible to differentiate two types of displacement. First, the type due to a single gross trauma, in which the condition is probably one of fracture through the juxta-epiphyseal line, though it is held by some[1] that the separation takes place through the actual epiphyseal cartilage. In this type there is definite, complete loss of continuity between diaphysis and epiphysis. The second type is that in which the deformity develops gradually, and there appears to be a bending of the neck of the femur, somewhat similar to that seen in the softened long bones of the rachitic child.

These two types, though giving rise to identical end-results if not treated, are different in aetiology and pathological anatomy, and manifestly cannot be treated in the same way. In this series a number of different methods of treatment were observed, and the final results recorded.

DIAGNOSIS

The history in the traumatic type is of a definite injury, following which the patient has pain and stiffness in the hip. In spite of the considerable displacement which is present, as evidenced by the radiographs, these patients are not completely disabled, but can limp along, and the injured limb is able to bear a little weight. In the gradual-slip type the patient usually gives a history of pain and increasing stiffness in the hip for a period of about twelve months; the condition is almost invariably diagnosed at first as "rheumatism."

The physical signs in the two types are similar, but are more pronounced in the traumatic variety. There is limitation of abduction and internal rotation, resulting in severe cases in adduction and external rotation deformity; there is often limitation of hyperextension, and sometimes flexion deformity. There is from one-half to one inch of real, and a varying amount of apparent, shortening. In one case there was marked abduction and external rotation, with fullness in Scarpa's triangle; this led to a provisional diagnosis of anterior dislocation of the hip being made until a radiograph showed the true nature of the injury.

ANATOMICAL CONSIDERATIONS

Up to the age of 4 years the head, neck, and trochanters of the femur are represented by a common cartilaginous mass, but later on, the neck, growing up from the dia-

physis, separates the head from the two trochanters. The age when union between the epiphysis of the head and the diaphysis takes place is given by different authorities at various ages between the fifteenth and twentieth years. Probably the eighteenth year would represent the average age of union. Up to this time the juxta-epiphyseal line is the weakest portion of the bone. Compensation is, however, provided for this by two factors: (1) the plane of the epiphyseal plate is almost horizontal and therefore perpendicular to the line of force of the body weight passing through it; and (2) the periosteum is strong and consists of two layers—a deep, which is attached to the junction of epiphysis and diaphysis, and a superficial, which blends with the joint capsule.[2] It is said that this periosteum is relatively weaker during the age period 12 to 16 years than at any other time, owing to the rapid growth of the femoral neck during this period.

Blood Supply

The upper femoral epiphysis, like any other epiphysis, together with the joint in which it takes part, obtains its blood supply from the circulus articuli vasculosus.[3] The vessels in the ligamentum teres appear to be of very little functional value after the first few years of life.[4] The arteries of the diaphysis are end-arteries, and no vessels penetrate the epiphyseal cartilage, which is avascular[5] and obtains its nourishment from the surrounding tissue fluids. Injuries of this area, however, rarely lead to any demonstrable necrosis, and the free anastomosis, supported by the tough periosteum, ensures that the epiphysis itself shall receive an adequate supply of blood, even when a considerable degree of displacement has occurred.

AETIOLOGY

The following data are based upon twenty-three cases.

Age.—In all the cases in this series the first symptoms were noted between the ages of 13 and 16 years, excepting in one case (E. B.), in which the first symptom apparently occurred at the age of 18.

Sex.—Sixteen patients were male and seven female. Of the cases in which the condition could be ascribed to a definite trauma six were in males and three in females. If it be accepted that males are more exposed to trauma than females during this age period, then this evidence suggests that trauma is a causal factor.

Rapidity of Growth.—Several writers are of the opinion that this is a factor in the weakening of the juxta-epiphyseal line. In the present series information on this point could be obtained in fifteen cases. Five patients were said to be growing quickly at the time the condition developed, while ten were not. None of the children were of the "overgrown lanky" type. Many children normally grow rapidly during this period, and this factor has no significance in my series.

Infection.—This has been considered to play a part in the weakening of the juxta-epiphyseal line that precedes slipping.[6] In no case in the series was there at any time a rise of temperature, nor did any patient show any signs whatsoever of suppuration in or around the joint.

Trauma.—Fourteen patients gave no history of trauma, and in these cases the radiograph was of the gradual-slip type. In three instances the condition followed immediately upon a severe trauma. In two cases (T. B. and C. J. N.) two definite traumata were reported; the first was fairly severe, while the second (occurring in each patient fourteen days after the first), although trifling, led to such marked symptoms that hospital treatment was sought almost immediately. In a third case (B. G. F.) the displacement followed a very slight trauma, the patient having no recollection of any previous injury. A fourth case (S. S.) dated from a fall from a bicycle fifteen months before admission to hospital. Two other patients (J. C. and D. K.) gave histories of moderate injury, but were subjects of pituitary dystrophy. The radiographs of the last nine cases mentioned showed that they were all of the traumatic type.

THEORETICAL CONSIDERATIONS

(*a*) The definitely traumatic cases present no difficulty. They are fractures through the juxta-epiphyseal line, the weakest part of the femoral neck in adolescence, and are aetiologically comparable with fractures of the neck in adults. Some authorities regard all cases as being ordinary fractures, but the definite differentiation of the two types appears to be against this view.

(*b*) In the gradual-slip cases the generally accepted view is that slight trauma leads to interference with the blood supply of the neck of the femur in the region of the epiphysis, either causing a local anaemia or, according to the views of Leriche and Policard, a local hyperaemia, which leads to rarefaction at the juxta-epiphyseal region. I have not been able to demonstrate any such changes in my series. It is then assumed that this rarefied area is unable to support the weight of the body, and gradually gives way under it. On this theory the two cases of "delayed slip" can be explained as fractures occurring through an area rarefied as a result of the alteration of the local blood supply caused by a previous trauma. But if it be admitted that trauma is the cause of this condition, it is obvious that other factors must play a part in the aetiology. Every adolescent sustains injuries to the hip, yet few develop "slipped epiphysis."

Evidence of bone softening was sought. In two patients it was found. One (R. R. P.) had renal rickets, and showed separation of other epiphyses. The patient has since died. In the second (E. B.) there was a generalized softening of bone, as evidenced by other deformities which appeared later—such as scoliosis. Two cases showed rickety deformities, but in each the condition had been inactive for several years.

The relation between the strength of the bone and the weight it has to bear is manifestly of importance. With the exception of the two instances just mentioned there was in no case in the series any evidence, either radiological or otherwise, of any weakness in the bone. It has been stated that in these patients widening[1 6] and fluffiness[7] of the epiphyseal line can be detected radiographically. I could detect no such change in my series. In two cases only (J. C. and D. K.) was there any abnormal load upon the bone. Both patients suffered from pituitary dystrophy, and it is significant that in both the deformity was bilateral. On the other hand, Ferguson and Howarth,[6] in a review of fifty-five cases, found that 65 per cent. of the patients were over-weight, and that half of them had endocrine imbalance.

PATHOLOGICAL ANATOMY

I had no opportunity of studying any actual bony specimens which could be proved to have been obtained from cases of this condition, and was therefore driven back upon radiographs for information regarding the pathological anatomy.

The neck of the femur is displaced upward and rotated outward relatively to the head, which is rotated backward. In the traumatic type this displacement occurs instantaneously, and there is complete dissolution of continuity of the bone, though there are strong reasons for believing that a part at least of the periosteum remains intact. In the gradual-slip type the same displacement takes place, but occurs gradually, and at no time is there complete dissolution of continuity of the bone. The weakened neck bends gradually under the strain of the body weight, which, once the displacement has commenced, no longer acts in a line perpendicular to the plane of the epiphyseal

TABLE OF END-RESULTS

Case	Age at Onset in Years	Sex	Type	Treatment	Time under Observation	Result		
						Functional	Clinical	X-Ray
J. W.	14	M.	Traumatic	Gentle manipulation. Retention 3 months. Protection 6 months	3½ years	Perfect	Perfect	Perfect
T. B.	13	F.	„	Forcible Manipulation. Retention 2 months. Protection to date	9 months	—	Moderate	—
B. G. F.	15	M.	„	Forcible manipulation. Retention 2 months. Protection 5 months	1¾ years	Bad. Fibrous ankylosis	—	Good anatomical reposition
J. C.	13	M.	„	Forcible manipulation. Retention 4 months. Protection (right) 3 months	1 year	Right poor Left poor	Fair Bad	Bad Bad
F. H.	13	M.	Gradual-slip	T.T. osteotomy. Retention 3 months. Protection 9 months	2½ years	Good	Fair	Moderate
G. R.	15	M.	„	See under	4½ years	Bad	Bad	Bad
H. S.	14	M.	„	Extension 5 weeks. Protection to date	1 year	Promising	Promising	Good
T. W.	16	M.	„	T.T. osteotomy. Retention 3 months. Protection 6 months	2½ years	Moderate	Moderate	Poor
E. L.	14	F.	„	Protection 18 months	4 years	Perfect	Good	Fair
M. H.	15	F.	„	T T. osteotomy. Retention 2 months. Protection 1 month	1 year	Good	—	—
L. D.	16	M.	„	T.T. osteotomy. Retention 2 months	1½ years	Good	—	—
V. C. G	15	M.	„	Open reduction. Retention 10 weeks. Protection 3 months	1½ years	Good	Moderate	Anatomically good, but very marked arthritis
R. J.	15	M.	„	T.T. osteotomy. Retention 10 weeks	2 years	Fair	Poor	Moderate

The treatment of G. R. was as follows: T.T. osteotomy, ten months, after which weight-bearing was allowed. Fresh displacement then occurred at the epiphyseal line, and a second osteotomy was done, followed by three months' retention and eighteen months' protection from weight-bearing. The hip was still painful and there was definite arthritis; a Lorenz bifurcation osteotomy was then done.

N.B.—In the above table, "retention" means retention in a plaster spica, and "protection" means protection from weight-bearing—in all cases by means of a walking calliper.

plate, but exerts a shearing effect. The radiographic appearance of the neck has been described as though it had partially "melted." In the early stages the upper corner of the stump of the neck projects opposite the upper border of the acetabulum. In the later stages this projecting stump disappears, and the upper border of the neck becomes smooth and rounded. Microscopically, changes similar to those found in rickets have been described. The condition, however, is one of irregular proliferation of cartilage cells similar to, but less pronounced than, that seen in rickets, and is merely the normal response of epiphyseal cartilage to trauma. It has been experimentally produced in rabbits.[8]

TREATMENT

The ultimate object of treatment is to obtain a functionally perfect hip-joint. Two factors are largely responsible for impairment of function in these cases: limitation of movement and arthritis. Shortening occurs, but is slight, and can be disregarded from the point of view of function. Limitation of movement of the joint is compatible with a considerable degree of usefulness for a time, but in these cases it appears inevitable for a painful arthritis to develop later. Our aim in treatment, therefore, is to obtain a hip-joint with a full range of movement without damaging the articular cartilage in so doing. This last point is important, because there are cases in the series in which anatomical reposition has been obtained, but in which a resulting severe arthritis can only be ascribed to damage to the articular cartilage caused by the forcible manipulation necessary to obtain complete reduction at one sitting.

The methods of treatment in the traumatic type and the gradual-slip type must be considered separately.

Traumatic Type

These are simple fractures, and theoretically it would appear that a simple manipulation would be adequate. In practice, however, it is found that considerable force is required to effect at one sitting complete anatomical reposition, and such a degree of force leads to severe damage to the articular cartilage, with resultant residual stiffness of the joint (cases B. G. F. and T. B.). Of the six definitely traumatic cases (excluding the two with pituitary disorder and one which could not be traced) three were recent, two were treated by forcible manipulation with one rather moderate result and one very bad one, and one patient (J. W., Figs. 3 and 4 on Plate) was treated by gentle manipulation, retention in plaster in full abduction for three months, and protection from weight-bearing for a further six months. Perfect anatomical reposition was not obtained by the manipulation, but the end-result was in every way excellent: in the radiograph (Fig. 4) taken three and a half years after the injury it is impossible to detect any abnormality. One of the cases of pituitary dystrophy (J. C.) was treated by forcible manipulation on both sides, with very unsatisfactory results. Jahss[9] in 1931 reported three cases in which good results were obtained by manipulative treatment, but it is worthy of notice that his cases were in young children (aged between 8 and 12 years), and were each of the traumatic type.

Gradual-slip Type

Here the problem is different. In some cases the juxta-epiphyseal line has consolidated in a position of coxa vara; in others it is still weak. Arthritis may be present in varying degree. Nine of these cases have been under observation long enough to enable one to draw some conclusions. In five transtrochanteric osteotomy was done. In view of the varying conditions present in these patients it is not possible to draw any deductions from the results obtained, but it is significant that the best result of the five (F. H.) was in the case in which protection from weight-bearing was the longest continued. In one (G. R.) the evils of too short a period of protection from weight-bearing are demonstrated in a series of radiographs, in which fresh displacement can be seen after the patient began to walk again without support. One case was treated by open operation, and although after eighteen months the function is good, radiographs show that in spite of good anatomical reposition there is a considerable degree of arthritis, and the prognosis as to function is correspondingly bad. There would appear also to be some danger of causing necrosis of the head by open operation.[10]

One patient was treated by extension on a Jones abduction frame. Fair reposition was obtained, and the function is promising. I can find only one case which

was traced in this manner described in the literature,[11] and the result is reported to be excellent.

One case was treated purely by protection from weight-bearing for eighteen months. There was an excellent clinical and functional result (the best of this type), in spite of a definite coxa vara as shown by the radiograph.

CONCLUSIONS

1. That two types of "slipped epiphysis" can be distinguished, differing in aetiology, pathological anatomy, and treatment.

2. That trauma is an aetiological factor, but that in the "gradual-slip" type some other factor must be present.

3. That evidence of softening of bone, widening of the epiphyseal line, and increased load upon the bone was sought for and, while found in a few cases, was not present in the majority.

4. That some other factor, not yet demonstrated, must be present.

5. That the pathological anatomy of the condition preceding the actual slip is obscure.

6. That gentleness of manipulation and prolonged protection from weight-bearing are essential features in the treatment.

7. That prolonged extension on a frame appears to be the most suitable form of "manipulation" in the gradual-slip type.

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A CASE OF MALIGNANT THYMOMA

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(With Special Plate)

The following case is of interest both from the clinical and from the pathological aspects.

The patient, a boy aged 2½ years, was admitted to the Victoria Infirmary, Glasgow, on February 4th, 1932, and died on the following day.

HISTORY

Five weeks before admission the child became rather listless, went off his food, and developed an irritating cough, which troubled him at night. Three weeks later it was noticed that he seemed to have a difficulty in breathing, and that he was crowing at night. He was seen by the local doctor, who sent him to Kilmarnock Fever Hospital with a provisional diagnosis of laryngeal diphtheria. Dr. Nesbitt, medical officer of health for Kilmarnock, took charge of the case in the Fever Hospital, and after appropriate treatment for diphtheria had been given with no evident results, the question of a lung lesion was raised—either a pneumonic condition or one due to a foreign body in the left bronchus. At the time of admission to the infirmary no bronchoscopic examination had been carried out.

CLINICAL REPORT (DR. BELL)

The patient is a well-nourished, well-developed child. The face, mucous membranes, and finger-nails are cyanosed; there is well-marked circumoral pallor. Both external jugular veins are greatly distended, as are the veins in the backs of the hands and arms. The suprasternal fossa is full, presenting the appearance of a goitre. It feels firm. There is bulging of the left side of the chest, lack of expansion, and absence of visible cardiac impulse. Percussion gives absolute dullness: breath sounds over the right lung are harsh and puerile, and abundant rales are present. Over the left lung the breath sounds are tubular, having a nasal quality. The pulse is rapid, thready, and regular in rhythm. There is no area of cardiac dullness. The heart sounds, audible only well to the left in the anterior axillary line, appear to be pure. The mouth is dry, and sordes is present on the tongue and lips. The teeth are healthy. The abdomen is somewhat distended, and moves with respiration. The liver edge is palpable about 1½ fingerbreadths below the costal margin.

The renal system appears to be normal; the pupils are equal and react to light; the reflexes are normal. A chest radiograph shows an entire dulling of the left side of chest, with no indication of lung tissue. The dullness extends over to the right side, and encroaches upon the right lung.

The left side of the chest was explored, and about 10 oz. of milky fluid was removed, which showed on examination the presence of lymphocytes, but no evidence of organisms or the presence of fat. After exploration the child was very restless, cyanosed, and breathless; stridor was present, and his general condition became very grave. Oxygen was administered and injections of atropine and morphine, but without relief. The stridor became worse, and immediate tracheotomy was performed, but without beneficial result.

POST-MORTEM EXAMINATION

Necropsy, performed by Dr. Anderson on February 6th, revealed the following findings.

On opening the chest there was found a tumour mass measuring about 6 inches in length, 4 to 4½ inches in breadth, and 1¾ inches in depth. It was situated in front of the pericardium, and spread outwards towards both pleural sacs. It was definitely a superior and anterior mediastinal growth occurring at the site of the thymus gland. It presented a globular appearance, was pale in colour, and of firm but not dense consistence. There was no evidence of the presence of haemorrhages. The right pleural cavity was normal. The hilum of the right lung showed the presence of several enlarged glands. The bronchus and pulmonary artery were normal. On section the right lung was congested, but otherwise normal. The left pleural cavity contained some turbid but non-purulent fluid. Adhesions to the upper lobe were present. The hilum of the lung presented several enlarged glands; the bronchus and pulmonary artery were normal. The upper lobe of the lung showed the presence of adhesions, and was in a state of collapse. The lower lobe was congested, and showed several small areas of localized collapse. On the surface of the lung were a few petechial haemorrhages.

The heart and pericardium were covered over by the tumour mass; chambers, valves, and muscular consistence were normal.

Apart from the main mass, areas of tumour growth were present in the pleuro-pericardial region, and some of the posterior mediastinal glands were involved. There was also a spread along the lymphatics in the intercostal spaces; on the left side the spread reached the anterior axillary border, while on the right side nodules were present in the intercostal spaces close to the vertebral column. The spleen was slightly enlarged and on section showed an increase of lymphoid tissue, with the Malpighian bodies unduly prominent. The liver was slightly enlarged, and on section showed a cloudy appearance. The pancreas was normal, but a few enlarged glands were present at the head. The suprarenals, stomach, and intestines

were normal. The kidneys were both enlarged, almost symmetrically so. They showed a lobulated appearance, with large areas of projecting pale cortex. On section the pale areas involved the external rind of the cortex and the intermedullary areas. The medullae and pelves of the kidneys were normal. The capsules were not adherent.

Microscopical Examination

Sections from the anterior tumour mass showed a glandular appearance, but no apparent division into cortex and medullary regions, as in the normal thymus, and with a distinct absence of Hassall's corpuscles. The main part was composed of round cells about the size of small lymphocytes, with deeply staining fragmented nuclei and a small amount of clear protoplasm. Meagre supporting fibrous tissue showed the presence of a number of branched reticulum cells. In addition, there were occasional small lymphocytes, granular leucocytes, and plasma cells. Blood vessels were not numerous.

The capsule of the kidney appeared normal. Immediately underneath it was an area of marked cellular infiltration, consisting of cells like those which were most abundant in the mediastinal growth. A few small lymphocytes and some typical stroma cells of thymus character were also seen. The glomeruli and the cortical tubules were set in a stroma which was densely packed with those cells, and a few of the glomeruli were infiltrated by them. The infiltration was confined chiefly to the region of the cortex, the medullary portion being for the greater part free. Some extravasated blood was seen in some of the tubules, and there was cloudy swelling of the epithelium. The effect of the tumour-cell infiltration was to compress and obliterate a number of the tubules.

The sections of the heart showed a round-celled infiltration between the muscular bundles, limited to the superficial region, and not extending any distance into the substance of the muscle. Definite loss of striation of the muscle cells was apparent. An area of the collapsed lung which was adherent to the tumour mass showed some cellular infiltration to be present, but, as in the case of the heart, it was only the adjacent alveoli that were affected, the collapse beyond being probably due to blockage of a bronchus. Sections of the glands showed very definite subcapsular spread of the tumour cells, while deeper down they were grouped round the lymph channels.

Microscopical examination of the tumour showed the characteristics of a round-celled sarcoma, differing from the lymphosarcoma of glandular type in size and staining property of the cell. The individual cells were for the most part of spherical shape, with fairly large-sized and deeply staining nuclei and small amounts of surrounding protoplasm. Some of the cells tended towards the short columnar type, but this was not a marked feature of the growth. The cells were arranged in dense groups with a small amount of fibrous tissue stroma, and vessels in the denser areas were few in number. No haemorrhages were seen. The reticulum of the thymus was definitely represented.

COMMENTARY

The question of lymphadenoma might be raised, but all the features of the case are against such an opinion. The possibility of a leukaemic enlargement of the thymus was weighed, and the involvement of kidney might favour such a view, but the absence of leukaemic infiltrations tends to negative the suggestion. On the other hand, no clinical examination of the blood had been made.

The tumour cannot be regarded as of the nature of a cancer of thymic origin derived from cells of the reticulum; nor can it be regarded as of the type of small oat-celled cancer described in cases of lung and mediastinal tumours by Barnard, and in thymic tumours by Duguid and Kennedy.

We have to acknowledge our indebtedness to Dr. Douglas Russell for permission to use the clinical report, Dr. Nesbitt for the history prior to admission to the infirmary, Dr. Jackson Wilson for the use of the *x*-ray plate and report, and Dr. John Anderson for the post-mortem report and the material studied, and for his advice and assistance.

VARICELLA IN OLD AGE

BY

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Until the beginning of the present century varicella was regarded almost exclusively as a disease of childhood; this can be seen from the statements of Eichhorst, Gee, Gregory, Moore, von Jürgensen, and Thomas. Undoubtedly this belief was in part responsible for the fact—which I have mentioned elsewhere—that numerous cases of varicella were erroneously certified as small-pox during the epidemic of that disease in 1901–2. According to the late Dr. Wanklyn, whose assistant I was at that time, no less than 16.7 per cent. of the 300 cases of chicken-pox sent to the receiving station at South Wharf during the epidemic with the certificate of small-pox were over 18 years of age. Several articles were subsequently published recording cases of varicella in adults, but all the writers were agreed as to its rarity in old age. Von Genser, for instance, states that of 29,250 cases of varicella notified in Vienna from 1894 to 1900 inclusive, only six were over 50, four being 51 and 55, and one each between 56 and 60 and 61 and 65. MacCombie, who had a remarkably extensive experience of acute exanthemata in various London fever hospitals, stated in 1906 that he had seen only seven cases of chicken-pox in persons over 30, one of them being in a woman aged 71. Writing in 1928, Schamberg and Kolmer stated that 49 was the most advanced age at which they had seen a case of the disease. In a remarkable epidemic of varicella recently reported by De Decker at Kipushi in the Belgian Congo the majority of the cases occurred in adults, though no mention is made of any aged persons.

During the period January 1st, 1926, to September 30th, 1932, twenty-nine cases of chicken-pox in patients aged 18 and upwards were admitted to the Western Hospital, and three occurred in members of the staff—namely, in two nurses aged 20 and 35 and in a wardmaid of 18. Of the twenty-nine patients only three were over 30—two men aged 31 and 64 respectively, and a woman aged 76. The man aged 64, in whom the diagnosis of chicken-pox had been confirmed by Dr. Wanklyn, was one of a series, to which I have referred elsewhere, of five fatal cases of the disease which have come under my observation during the last thirty-two years. He was an alcoholic and debilitated subject, who was admitted to hospital with a copious eruption of varicella complicated by bronchopneumonia and albuminuria, and died three days later. The necropsy showed bronchopneumonia of both lungs, a large fatty and dilated heart, and cirrhosis of the liver.

I was asked on June 25th, 1932, to see the woman aged 76 in my capacity as one of the small-pox consultants to the London County Council, because her age and the severity of her illness had suggested the possibility of small-pox. The distribution of the lesions, however, and their size, shape, and multiformity, as well as the history of their appearance on the first day of disease, indicated chicken-pox. The diagnosis, moreover, was subsequently confirmed by a history of exposure to the disease within the previous fortnight at a hospital where she had been under treatment by deep *x*-ray therapy for lymphosarcoma. On admission to the Western Hospital there was considerable constitutional disturbance, and the temperature was 102°. The presence of lymphosarcoma was indicated by enlarged glands in the neck, axillae, and groins. In addition to its typical appearance and distribution elsewhere the eruption of chicken-pox was confluent over the parts of the left side of front and back of the chest and left arm, where she had undergone deep *x*-ray therapy. The temperature became finally settled on the third day after admission, and there was a rapid improvement in the general

condition. The lesions in the area where the eruption was confluent showed some tendency to ulcerate, but ultimately complete healing took place and the patient was discharged on July 30th without any complications having occurred. There also appeared to be some diminution in the size of the enlarged glands in the axillae at the time of her discharge.

As far as I have been able to ascertain from a fairly extensive investigation of the literature, this patient appears to be the oldest one in whom varicella has occurred, though doubtless older persons have been attacked without their histories having been reported.

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THE DESIGN OF DIRECT PEDICLE FLAPS

BY

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The purpose of this communication is to describe a simple technique for the accurate design and transference of a full-thickness pedicled flap from one part of a patient to another without danger to the blood supply. The use of the direct flap method instead of the tube pedicle type of graft is to be preferred wherever possible, because it reduces the number of essential operations to two, with an interval of two to three weeks, thus shortening the period of stay in hospital very considerably.

The principle of the method is to imagine the operation completed and to reverse the steps of the procedure of transferring the flap, using as a model an exact jaconet or linen pattern of the defect to be covered. It is thus possible to arrive with speed and accuracy at the correct topographical origin of the flap to be cut from the donor area. Suppose that there is a rectangular area over the posterior surface of the elbow-joint to be covered by a direct flap taken from the side of the abdomen. After the usual pre-operative preparation of the patient and sterilization of the pattern, the elbow is flexed and approximated to the side, bringing the defect as close as possible to the donor area. The pattern is now fitted accurately to the defect. The assistant holds the lateral edge carefully in position while the medial edge is turned over on to the abdominal skin and held by the surgeon in the position which it naturally takes, so as to leave the intervening portion comfortably slack. The lateral edge of the pattern is then released and the arm moved away from the side, while the surgeon smooths the remainder of the pattern over the abdomen. The skin outlined by the pattern is marked by scratching, and dissected up to form a flap, the attached side of the flap on the abdomen corresponding to the edge of the pattern first shifted to the body. It is necessary in some situations to allow enough extra at the base of the pedicle to ensure a sufficiently large area of the flap being sutured in position. After two to three weeks the attached end of the flap is divided and sutured into position on the arm. The line of division can be readily marked out by placing the pattern in position over it.

The advantage of the method will be realized in direct transfers from limb to limb, such as calf or ankle to opposite leg or thigh. It will be found a great comfort to know that the flap will fit its new bed accurately without it having to be pulled into place by overstretching some portions or inserting stitches, which exert considerable tension. Gangrene and removal of stitches are thus largely avoided.

The same principle of reversing the operation is applicable in making the design for all tubed pedicle transfers, but is not quite so essential owing to the great mobility and vitality of these flaps.

A PATIENT WITH FOUR URETERS

BY

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(With Special Plate)

A double ureter on one side is among the more common abnormalities of the urinary tract, and is not infrequently associated with a hydro-ureter or other congenital defect on the opposite side. The two ureters arise from separate pelves and commonly fuse at some part of their course, being seldom completely separate for their entire length. Most often they join shortly above the bladder, which they enter by a common orifice. The union may take place soon after leaving the kidney, a single ureter continuing to the bladder, though it may again bifurcate and enter the bladder by two openings.

Two ureters on both sides, each entirely separate through its whole length, with four separate openings into the bladder, is a condition so rare as to make such a case worth recording. There is no example of this condition in the museum of the Royal College of Surgeons, or in the museum at the Hospital for Sick Children, Great Ormond Street.

HISTORY OF THE CASE

A girl, aged 8 years and 11 months, had a first attack of pyelitis in June, 1928, lasting three or four weeks. She had similar attacks each year until August, 1931. Since then attacks have been more frequent. The main features of the illness were fever and increased frequency of micturition; there was no pain.

The patient is rather pale, but of normal development. There is no abdominal tenderness. The lower pole of the left kidney is palpable.

SPECIAL INVESTIGATIONS

Blood urea was 29 mg. per 100 c.cm. Urea concentration: before urea, 2.15; first hour, 2.55; second hour, 2.40; third hour, 1.40. Examination of a catheter specimen of urine showed: specific gravity, 1020; turbid; alkaline; fair number of leucocytes and organisms, an occasional bladder cell, and a few amorphous phosphates. Culture of the specimen resulted in a profuse growth of *B. coli*.

X-ray photographs (see Plate) taken after the injection of 13 c.cm. of uroselectan reveal the presence of two pelves to each kidney, opening into separate ureters. The lower pelvis on the right side is slightly dilated, but the calyces appear normal. The other three pelves are not dilated. The two ureters on the right side can be traced separately as far as the bladder. On the left side the shadows overlap, and only a single shadow can be traced to the bladder.

On cystoscopic examination (five-ounce distension) the following points were noticed: Bladder surface was normal. Two gaping ureters were seen on right side at same level. On the left side two openings were seen, the outer one small and retracted at a slightly higher level than the median opening, which appeared as a narrow slit. Indigo-carmine (1 c.cm.) was given intravenously, and showed in good colour in nine minutes, with a strong efflux from the outer ureter

on the right side and the median opening on the left. No urine was seen coming from the median opening on the right side or from the outer orifice on the left. Catheters were passed without difficulty up all four ureters.

DIFFERENTIAL URINE ANALYSIS

Catheter Specimens from Right Kidney

Right Outer Ureter.—Urine somewhat blood-stained; specific gravity, 1012; acid; urea, 1.16 per cent. White blood cells +, red blood cells ++. Gram-negative bacilli and a few streptococci present. Culture yielded a heavy growth of *B. coli*.

Right Median Ureter.—Urine slightly turbid; acid; urea, 1.63 per cent. White blood cells +, red cells ++. Gram-negative bacilli and a few streptococci present. Culture yielded heavy growth of *B. coli*.

Catheter Specimens from Left Kidney

Left Outer Ureter.—Urine turbid and very blood-stained; faintly acid; specific gravity, 1010; urea, 0.70 per cent. Very few white blood cells, and many red cells. No organisms seen. On culture there was a heavy growth of *B. coli*.

Left Median Ureter.—Urine turbid; amphoteric; specific gravity, 1006; urea, 0.43 per cent. Many white cells but very few red cells present. There were some Gram-negative bacilli. On culture there was a heavy growth of *B. coli*.

The urine from all four catheters correspond closely, all being heavily infected and showing a low urea content, the right side being a little the better.

RESULTS OF TREATMENT

As the patient did not appear to benefit under the usual urinary antiseptics, a trial was made of the ketogenic treatment. At first the organisms per cubic centimetre of urine diminished from being uncountable to about 1,000 per c.cm. at the end of a week, but at the end of a fortnight a sudden increase took place, and the daily count varied from 15,300 per c.cm. to approximately 100,000,000,000 per c.cm. After about four weeks, therefore, the diet was discontinued, as it was clearly doing no good.

During the ketogenic treatment one or two evening rises of temperature occurred, associated with some headache, otherwise the general condition of the patient seemed unaffected. She was subsequently discharged to the country branch of the hospital at Tadworth, where her general health improved considerably, though the condition of the urine remained unchanged.

MONILETHRIX*

A GROUP OF TWENTY-TWO CASES

BY

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(With Special Plate)

In emphasizing the infrequent incidence of monilethrix O'Donovan[1] cites the experience of J. Schutz, who, during seventeen years' hospital practice in Frankfort, saw only one case of this affection. Up to the present time I am unaware of ever having encountered the condition save in the group, including five generations, which forms the subject of this communication.

THE SON

Early in May of this year a boy, aged 5½ years, was sent to me as a possible sufferer from tinea tonsurans. His hair, however, had not been examined microscopically. At first sight the scalp posteriorly certainly suggested ringworm, but the furfuraceous scaling which so often accompanies that disease was not in evidence. About the occipital protuberance, which was sparsely covered, and suboccipital region stumps of hairs—some of which were twisted—and short hairs were seen, while keratosis pilaris was well marked on the nape (Fig. 1 on Plate) and very slightly present on arms and forearms. His father, who accompanied him, strenuously asserted it was not ringworm, and said that he himself was similarly affected, as was his small daughter, aged 7½ years, who was with them. Microscopical examination of hairs from the boy's scalp revealed the pathognomonic features of monilethrix. The boy has to have his hair cut in front only. The macroscopical appearance—stumps of hairs, some of which were twisted, and short hairs, distributed in a patchy manner with keratosis pilaris roughly simulating a mycelial sheath—might quite well have led a busy physician to a hasty diagnosis of tinea tonsurans.

HIS FATHER

Some weeks later, after several unsuccessful attempts owing to the father's occupation as a miner, I saw the three subjects for further investigation. Microscopical examination of the father's scalp hairs showed profusion of nodes in the occipital ones. Frontally, where the hair was longer, they appeared to be more elongated. Axillary hair showed some irregular variation in diameter. Hair from the arm exhibited nodes, and in one hair from that region the medulla was broken up into distinct islets, while at one area between two islets some narrowing of the capillary calibre was suggested, raising the question of whether the malformation might originate in the medulla. Hair from the pubis showed definite nodes. No nodes were detected in lanugo hairs from the trunk. The affection in this subject was situated, in so far as short hairs are concerned, mainly posteriorly and on the vertex. He stated that the hair anteriorly, although much longer (two inches at least) tended to break, that he had only once had it cut—while recuperating after a war wound. At the time of examination infiltrated erythematous elevations were noticed on the nape, which he stated were the result of midge bites. As pediculosis capitis was detected, however, it is quite possible that they were due to the latter condition, and were urticarial in nature. No keratosis pilaris was present except on the thighs. With some hesitation a biopsy was suggested, to which he most readily and generously agreed.

THE DAUGHTER

On his daughter's scalp short hairs occurred mainly in the suboccipital and extreme frontal regions; some of the hairs were twisted and were very easily broken. The pigmentation in some parts appeared to concentrate half nodally and half internodally. Keratosis pilaris was profuse on the nape and occiput, and also present on the thighs and legs, and very slightly on the arms and forearms. Pediculosis capitis was noticed, as was abortive impetigo contagiosa on the face. This was also evident in the son.

FAMILY HISTORY

The father told me he had other relatives similarly affected. Their family physician kindly assembled them, and, accompanied by my house-physician, I visited them, removing hairs from the scalps of fourteen other persons, varying in age from 1½ to 77 years. Microscopical examination of the scalp showed pathognomonic hairs in every case. The septuagenarian—the grandfather of the boy sent for diagnosis—said that both his father and grandfather had been similarly affected. His alopecia was almost absolute. He wore a wig. He was the only one of seventeen children to be affected. His father, who had the disease, had never spoken of a sister or brother, and was probably an only child. His grandfather also had the disease; here again there is a doubt as to whether he had brothers or sisters. He himself has had fifteen children—nine boys and six girls. At birth they all had good heads of hair. Three of the daughters died in infancy, aged respectively 12 months, 18 months, and 3 years—all with good heads of hair. Five out of the nine boys developed the condition, and also one out of the

* Read in the Section of Dermatology at the Centenary Meeting of the British Medical Association, London, 1932.

three surviving girls. All his affected children eventually married. Of these:

A son, aged **55**, has four children, two boys and two girls; all are affected.

A son who was killed at the age of **47** left four children, two boys and two girls, of whom two girls are affected. Both wear wigs.

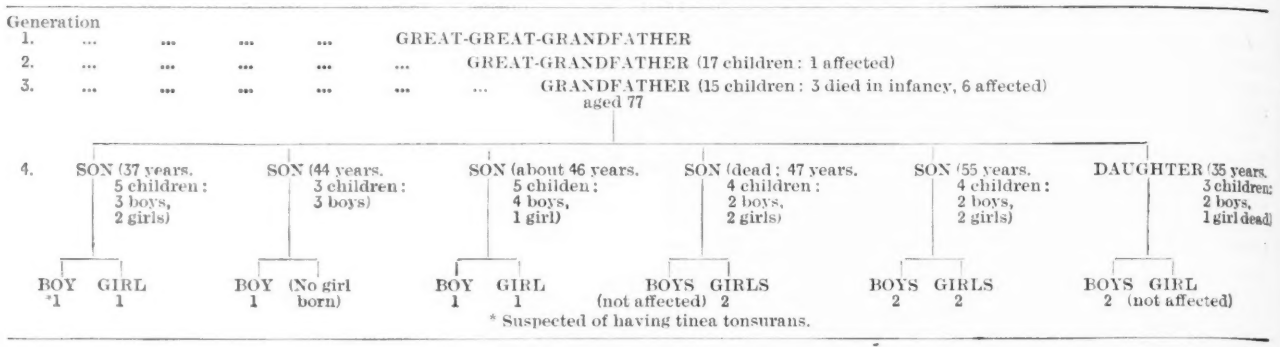
A son, aged about **46**, has five children, four boys and one girl, of whom one boy and one girl are affected.

A son, aged **44**, has three children, all boys, of whom one boy is affected.

A son, aged **37**, has five children, three boys and two girls, of whom one boy—the suspected tinea tonsurans case—and one girl are affected.

A daughter, aged **35**, has had three children—two boys, and one girl who died. The two boys are affected.

FAMILY TREE.—*Showing Members Affected with the Disease*


Generation
1. ... ... GREAT-GREAT-GRANDFATHER
2. ... ... GREAT-GRANDFATHER (17 children: 1 affected)
3. ... ... GRANDFATHER (15 children: 3 died in infancy, 6 affected) aged 77
4.
SON (37 years. 5 children: 3 boys, 2 girls)
SON (44 years. 3 children: 3 boys)
SON (about 46 years. 5 childen: 4 boys, 1 girl)
SON (dead; 47 years. 4 children: 2 boys, 2 girls)
SON (55 years. 4 children: 2 boys, 2 girls)
DAUGHTER (35 years. 3 children: 2 boys, 1 girl dead)
BOY *1 GIRL 1
BOY 1 (No girl born)
BOY 1 GIRL 1
BOYS (not affected) GIRLS 2
BOYS 2 GIRLS 2
BOYS 2 GIRL (not affected)
* Suspected of having tinea tonsurans.

Of this series of thirteen children seven are boys and six are girls. In the whole group of twenty-two subjects occurring in five generations I have seen seventeen, and microscopically examined affected hairs from all their scalps. I have seen portraits of four of the remaining five subjects. From these data it would appear that in the later generations there had been increase in the frequency of incidence of the affection. In the third generation the percentage was **5.88**; in the fourth **40**; and in the fifth **54.16**. I might not be allowed, in the event of further inheritors of this condition, to note their numbers in the next generation, but it would be interesting to observe whether the percentage of sufferers continued to increase.

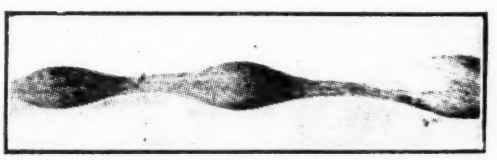
All the adult males from the most remote have followed the occupation of coal-miner, and the affected daughter of the fourth generation married a miner. The extent and intensity of the disease in the scalp varies from almost complete baldness—as seen in the septuagenarian—to a scalp well covered, except suboccipitally and in the extreme frontal region observed in the sister of the boy whose scalp suggested ringworm. Wigs have been or are worn by five of the affected—two men and three women.

It was noticed by his mother that the hair of one youth, now **15**, whom I saw, showed at the age of **14** years signs of improvement of growth. This would appear to be coincident with the advent of puberty, a period associated with increased glandular activity, which obviously introduces the question of an aetiological role sustained by the sebaceous glands, which are so intimately involved with the root sheath in the development of the embryo.[6] The strong hereditary and familial features of the disease are well brought out in this group of successive cases in five generations with six out of fifteen children affected in the fourth generation, and thirteen out of twenty-four in the subsequent one.

DISCUSSION

Solitary cases of monilethrix have been recorded. Stelwagon and Gaskill[2] mention that Gilchrist Morrow and Ruggles describe cases limited to the legs and also cases which appear in adolescent or adult life. In this matter of date of onset Sabouraud[3] states that the affection begins by a fall of hair about the sixth week. I have found some difficulty in getting exact information as to onset in the fourth and fifth generations, but roughly it would appear to have been in some cases as early as the sixth month and in others at dates varying from this up to the fourth and fifth years. One parent states that the children (two) were born with hair which faded away at the age of 6 months, and this was followed by keratosis pilaris. This is of interest, as it has been advanced that keratosis pilaris determines the development of nodes. Certainly it is a very frequent accompaniment, for of the eleven children of the fifth generation seen by me ten had it on the scalp. I must admit that the solitary exception, a boy of $1\frac{1}{2}$ years, was very refractory under examination. Of the six adults examined only three had the disease on the scalp, and one of these only slightly. From its almost invariable presence in the children one might deduce that the keratosis pilaris of the scalp tends to disappear with advancing years. Hairs from the scalps of the first three subjects were sown on Sabouraud's medium and colonies of Sarcinae obtained in each of the three tubes, in one of which a culture of *Staphylococcus albus* also appeared. Attempts at culture were made in four other cases, but at a considerable interval after removal of the scalp hairs. A yeast and *Staphylococcus albus* resulted in one case, and in another a growth of Penicillium type. One of the male adults, aged **46** years, developed at the age of **10** years right cervical tuberculous adenitis, and on starting to work in the coal pit wore a band on the neck to which his lamp was attached. Lupus vulgaris appeared on the right side of the neck and extended to the nape. One youth aged **16** suffers from right internal strabismus.

I have seen it recorded that in monilethrix an affected hair is involved from root to extremity. I do not think



Photomicrograph of monilethrix hair, showing nodes, with concentration of pigment in one-half of a node and continuous internode.

that this invariably occurs, as I have examined a pubic hair which appeared to be affected in only a part of its length. While all observers state that fracture of the hair occurs at an internode, there is some variance of description in the matter of pigmentation. Most describe a concentration of pigment in the nodes with corresponding depigmentation of the internodes. Max Joseph[4] states, however, that the nodes appear lighter than the internodes in hair of slight pigmentation owing to the presence of air in the medullary canal of the nodes. This optical effect, he states, disappears in deep black hair, where the appearances are reversed. Microscopical examination, however, of grey hairs from the grandfather in this group showed pigmentation of the nodes. It has been stated that the pigmentation contrast is due

to the difference in diameter of the nodes and internodes. This would appear to be an inadequate explanation owing in some instances to the extreme degree of internodal depigmentation, and I have more than once seen concentration of pigment in areas composed of contiguous halves of nodes and internodes (see Figure in text).

An arresting feature seen in an arm hair was the separation of medulla into distinct islets, a possible abortive attempt at node formation, for at one point narrowing of calibre was suggested. In some hairs twisting of the internodes was detected, but it was decided that this was sometimes only apparent and due to an unequal distribution of pigment in the internode.

Aetiology of the Disease

This still remains very debatable. Darier[5] quotes a theory, for which Golay appears to be responsible, that the formative papilla undergoes alternate dilatation and atrophy comparable to a pulsation of which the rhythm is daily. Other observers, however, state that the nodes represent two days' growth. Certainly the process arises intrafollicularly, as the photomicrograph of a section of skin from the scalp of the father of the boy who was suspected of having tinea tonsurans, containing three nodes within the follicle, clearly demonstrates (Fig. 2 on Plate). The almost invariable association of monilethrix and keratosis pilaris is arresting, but would tend to point to a common aetiology rather than that the latter was the cause of the former, for monilethrix may precede keratosis pilaris. Again, keratosis pilaris arises from hypertrophy, whereas the abnormality in monilethrix lies, not in the node, which is of normal diameter, but in the atrophied internode. It will be recalled that attention was drawn to the occurrence of islets of medulla, and that this might be an early stage in the development of nodes. It should also not be forgotten that improvement occurred in one case at puberty, with its increased glandular activity, which might include the sebaceous or other glands in the aetiological picture.

These various features open up a large field of possibilities into which I do not at present intend to venture further. Investigations are not by any means completed, and I hope to resume them in the near future.

My best thanks are due to Dr. Donald Douglas, Mr. Charles Bennett, Professor E. M. Dunlop, Dr. A. B. Kerr, and my house-physician, Dr. Brownlie, for much generous assistance.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

AN UNUSUAL CASE OF HYDRO-PNEUMOTHORAX

The following case presents features of unusual interest, and illustrates a group of conditions which would appear to be extremely rare.

History.—The patient, a married woman, aged 47, was admitted to Heathfield Sanatorium on September 2nd, 1932, with the history that six days previously she had consulted her doctor for a severe pain on the left side of the chest, which radiated to the left shoulder. Two days later she carried out her ordinary duties as charwoman in a cinema, but the same evening became violently sick, and vomited. The vomitus consisted of glairy fluid only, and anything she drank was returned immediately. Retching continued almost up to the time of admission to hospital, and was accompanied by pain of a pleuritic character on the left side. Two days after the appearance of these acute symptoms dullness was demonstrated at the left base, and the following day—the day preceding her removal to hospital—paracentesis was carried out and fluid drawn off. At 9 a.m. on the day of admission she had sudden acute pain in the chest, accompanied by severe dyspnoea. A diagnosis of pneumothorax was made, confirmed by an escape of air on the introduction of a needle into the chest, and the patient was sent into hospital with that diagnosis.

On admission she was extremely ill, presenting all the symptoms of acute heart failure and shock, was very dyspnoeic, and cyanosis was extreme, the hands being almost purple. Immediate examination was deemed inadvisable, treatment for shock being instituted at once. Physical examination without disturbing the patient revealed diffuse pulsation on the right side of the chest due to gross displacement of the heart, and a tympanitic note to percussion all down the left side of the thorax. "Coin" percussion failed to elicit the "bell" sound. The patient's condition gradually became worse, and she died a few hours after admission.

The following additional history was obtained from the patient's husband after her death. She had enjoyed good health until the last few years of her life. She had had three normal full-time pregnancies, and two abdominal operations for prolapse of the uterus. Several years previously she became troubled with a slight cough, which was accompanied by a frothy spit, and for the past two years she had definitely lost weight. Frequently, over the same period, she would rise from the table, vomit, and then return to resume her meal; she also complained of flatulence, and occasional pain in the abdomen. Two or three months before she died she first complained of a pain, which recurred at frequent intervals up to the time of her death. This pain was located over the left side of the chest behind, radiating to the left shoulder, to the left side of the neck, and was sufficiently severe at times to cause her to lie down to obtain relief; sickness did not accompany this pain. An additional point of interest is that the patient remarked to her husband just prior to her removal to hospital "that she did not think anything was getting into the stomach."

Post-mortem Findings.—When the chest was opened the collapsed left lung was found to occupy the upper part of the thoracic cavity on the left side. The heart and mediastinum were markedly displaced to the right, and the remainder of the left thoracic cavity was occupied by the stomach, spleen, and some free fluid, which gave an acid reaction to litmus and was similar in appearance to the fluid found in the stomach. The stomach was slightly ballooned, and did not present the appearance of a strangulated viscus. When it was compressed more gastric contents found their way into the thoracic cavity from a perforated ulcer, situated on the posterior part of the stomach wall, near the gastro-oesophageal junction. The spleen was found lying behind the stomach close to the posterior margin of a hernial opening in the diaphragm, and was pale and shrunken, its surface having a crenated appearance; its diameters measured 3¾ by 2½ inches. The hernial opening was ovoid in shape, occupied a position in the centre of the left leaflet of the diaphragmatic tendon, and measured 2¾ inches and 1¼ inches in its long and short axis respectively. Portions of the great omentum and gastro-splenic ligament adhered to its margin. At the hernial opening the pylorus came into contact with the cardiac end of the stomach, and by traction on the former the stomach could be partially returned to the abdominal cavity. The capacity of the stomach was found to be approximately 1,000 c.cm. To the left of the hernial opening and in close relation to the spleen, but from which it was separated by an invaginated portion of the diaphragm, lay the

"tail" of the pancreas. The only other post-mortem findings of interest were the presence of a stone, about the size of a large pea, in the gall-bladder, which may have accounted for some of the early digestive symptoms noted in the history, and the fixation of the uterus to the anterior abdominal wall. The bacteriological examination of the fluid drawn off by paracentesis during the acute stage of the illness revealed the presence of "streptococci, staphylococci, a few pneumococci, and *B. coli*."

We are indebted to Dr. Brewster for his clinical notes on the case, and to Dr. M. J. Miller for the bacteriological report on the fluid.

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A CASE OF HYPODERMOLITHIASIS

Epidermal stones are so rare that we thought the following case worthy of record. According to Kohler not more than twelve cases have been reported in the medical literature, and in the examination of approximately 10,000 hands we have not met with a case before.

The patient, a woman aged 48 years, attended the out-patient department of the Manchester Royal Infirmary because of a painful swelling at the tip of the middle finger of the right hand. The history of the condition had commenced about twelve months previously, when the patient noticed that if she chanced to knock this finger it was unduly painful, though at the time there was nothing visibly wrong. About six months later it became rather swollen, and a small yellow blister appeared at the tip. The patient pricked this blister, and a small quantity of yellowish-white pus was made to exude. Thereafter the finger healed; but as it had since remained painful she was sent down to the *x*-ray department to determine the presence or otherwise of a sequestrum. Another blister had appeared on her right thumb about two years ago, which cleared up after similar treatment. She said that she had always had a bad circulation. Her hands and feet go very cold when the weather is cold, or when she puts them in cold water. At the same time they go blue, and remain thus unless she takes steps to warm them again. She had never had any trouble with her left hand, or with either foot, except "coldness."

X-ray examination of the right hand showed very dense multiple nodular opacities situated at the tip of the terminal phalanx of the middle finger, similar opacities at the tip of the little finger, and a smaller one at the outer side of the base of the second phalanx of the index finger. Clinical examination showed that these were hard and fixed, but no further nodules were found in other regions of the body, a fact which was supported by skiagrams taken at the same time. The pathologist's report on one of the calcified bodies which was removed was that it consisted of a fine branching connective tissue core covered by very dense hyaline fibrous tissue in which gross calcification had occurred.

According to one author who described a similar case, analysis of these deposits showed that they were composed of phosphate and carbonate of lime, but no trace of uric acid was found.

Our thanks are due to Mr. W. R. Douglas, by whose permission we are able to publish this case.

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Reports of Societies

SPECIAL SUBJECTS IN THE CURRICULUM

At the November meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland the president, Dr. W. G. HARVEY, read his inaugural paper on "The teaching of special subjects in the medical course." The chair was taken by the President of the Academy, Professor T. G. MOORHEAD.

Dr. HARVEY held that the length of the medical course should not be increased by the addition of more subjects. The aim of a medical course should be to shape students so that they might become qualified to deal with disease to the safety and satisfaction of the public, and not to produce a body of "all-round specialists." It should lay a sound foundation of knowledge, capable of bearing whatever high superstructure might be erected upon it hereafter. In respect of any specialty the following questions should be considered: (1) Is its inclusion in the medical course necessary for the student, or should it be made a course of post-graduate study? (2) Is the subject already dealt with in the course, and, if so, is its inclusion in every way satisfactory, or are any changes desirable? (3) If necessary, but not included, can it be absorbed into the teaching curriculum without adding to the length or overcrowding of that course? In his own subject of dermatology Dr. Harvey felt that no extension of the medical course was necessary for the ordinary medical student. There should, he suggested, be lectures on the principles of the diagnosis and treatment of skin diseases as a necessary part of the university course, so that students would derive more benefit from attendance at skin clinics in their hospitals. Conferences between the teachers of pathology, histology, therapeutics, and dermatology would be useful by inducing the teachers of the wider subjects to illustrate their lectures by reference to the practical bearings (not only on dermatology, but on other branches of applied medicine) of the principles which they taught.

Dr. R. R. WOODS discussed the teaching in diseases of the ear, nose, and throat. He said everybody agreed that it was desirable that students should be taught something of specialties, while it was both undesirable and impossible to turn out men who were specialists in every branch. A compromise must therefore be made, and in deciding the compromise the general practitioner's point of view must be studied. The general practitioner's needs were: first, to know in detail cases which he might meet with as emergencies and have to deal with himself; and, secondly, to know in general what the specialty could do and how it could help in diagnosis and treatment of his cases. Thus he must know all about tracheotomy and how to perform it, while he only need know that laryngo-fissure could be performed in suitable cases. In teaching oto-rhino-laryngology the difficulties were: (1) the method of examination was difficult for beginners; (2) special instruments were necessary; and (3) only relatively few students could examine a given case without undue fatigue to the patient. In general the aim should be to teach methods and to put the student in a position to learn for himself. The parts of this subject that students should know thoroughly were: laryngeal obstruction and tracheotomy; earache and its various causes; mastoiditis and intracranial complications of ear disease; and, finally, sore throats, with special reference to scarlet fever, diphtheria, and peritonsillar abscess. In a general way he should know how oto-rhino-laryngology could help him in: (1) chest cases, by removal of tonsils and adenoids, treatment of sinusitis, bronchoscopy, and the relation of tuberculous laryngitis to phthisis; (2) foreign bodies in the air and food passages; (3) carcinoma of mouth, throat, and oesophagus; (4) headaches—causes in nose and ear; and (5) something about colds in the head and the way to avoid their maltreatment. This would best be accomplished by a combination of clinical lecture-demonstrations for the group of emergency cases: about ten hours would be enough, combined with general experience in residence.

And for the second group four or five theoretical lectures dealing with the subject in a general way would suffice. If extra time in the medical course must be made for specialties botany and zoology could be cut out.

Dr. E. T. FREEMAN, referring to pulmonary tuberculosis, emphasized the value to medical students of thorough training at their clinical hospital in the diagnosis and treatment of the disease. Such knowledge was a necessary part of every practitioner's equipment, especially in Ireland, where pulmonary tuberculosis was responsible for over one-third of the deaths between 15 and 40. A special course in a sanatorium did not familiarize the student with the task of picking the cases of tuberculosis from among the patients presenting such a variety of symptoms as amenorrhoea, stomach trouble, anaemia, and debility. Moreover, such a special course was very often too short.

Dr. L. G. GUNN held that the student was already overburdened with special teaching, and that such teaching should be diminished rather than increased. A special course in urology was not necessary, but all clinical teachers should feel it was their duty to see that every student had facilities for learning how to pass a catheter, examine a urethral smear, take blood for a Wassermann test, and give an intravenous injection. He should also know how to diagnose and treat a case of acute retention of urine. Many a man qualified in medicine and surgery without knowing how to carry out such simple procedures, and this, in Mr. Gunn's opinion, was a fault in the present medical course. Dr. R. E. STEEN emphasized the need for better teaching of paediatrics. There was not enough accommodation in general hospitals to enable the teaching of this branch of medicine to be carried out satisfactorily. Most child patients were brought to the children's hospital, where there was no organized clinical teaching which the student was compelled to attend.

Dr. W. C. MACFETRIDGE said that the teaching of his specialty (ophthalmology) had been criticized. It had been stated that too much time was given over to the teaching of refraction and to looking at disks. But he would be glad to know if the surgeons who made criticisms took the trouble to see that their students were taken carefully over all the essential parts of surgery in the course of the clinical year. He thought that surgeons and physicians were not nearly systematic enough in their hospital teaching. As far as knowledge of ophthalmology was concerned, he found that most practitioners now carried about a modern ophthalmoscope and made frequent use of it in diagnosis. Surgeon J. L. KEEGAN expressed the view that students should be allowed to attend hospitals from the very beginning of their medical course. Mr. W. PEARSON said that in Dublin University the regular attendance of students at hospital was ensured by a system of attendance cards, which had to be signed. He was not in favour of students coming too early to hospital. Some knowledge of the preliminary sciences was essential before a student could derive any benefit from hospital attendance. Dr. W. R. F. COLLIS thought that the teaching of paediatrics was worse in England than in other places, particularly Germany and America. He supported Dr. Steen's plea for the introduction of a more systematic course of paediatrics in the curriculum; paediatrics was, above all, the study of the growing child. Dr. V. M. SYNGE objected to the system of hospital cards; the attendance of students at hospital had been worse since they had been introduced. He disliked the teaching of the preliminary sciences, which he regarded as unnecessary. The curriculum was too long already, and he hoped that nothing more would be added to it. There was, he felt, too much teaching in the lecture rooms and in the laboratories. What was really wanted was more hospital teaching.

Dr. T. G. MOORHEAD, in summing up, said that he was struck by the sanity of the discussion and the modesty of the demands made by the specialists. That sanity and that moderation contrasted strongly with the spirit of the General Medical Council as evinced in many of its recent recommendations. When considering the position of specialties in the medical curriculum he felt that it was necessary to think of the curriculum as a whole. The medical course fell naturally into two portions. During the first two years the preliminary sciences were taught. He felt strongly that a sound knowledge of those preliminary sciences, including biology, was absolutely essential. In teaching the principles of those sciences facts bearing on the future life-work of the student should be used as much as possible in illustration. In the second or clinical part of the course he felt that there was only time to give a man a thorough knowledge of the principles of medicine, surgery, and midwifery. Once those principles were acquired, and once a student was placed in a responsible position himself, he could acquire additional facts with extraordinary rapidity. If, however, as a student he was swamped in detail and failed to acquire a scientific outlook, he could never hope in after life to be a really sound practitioner. As far as possible he should be made familiar with the everyday emergencies included in the so-called specialties, but a systematic course should be reserved for post-graduate teaching.

NEPHRITIS

At a meeting of the Section of Medicine of the Royal Society of Medicine on November 22nd, with Dr. H. MORLEY FLETCHER in the chair, a discussion on the pathogeny of nephritis and its bearing on treatment was opened by Professor O. L. V. DE WESSELOW.

The pathogenicity of ischaemic nephritis, he said, was essentially that of hypertension; nephrosis was so rare as to be of minor importance. Focal nephritis, which need not be considered as a separate entity, and diffuse nephritis were generally admitted to be infective in origin. The provocative infection might be situated anywhere in the body, but was, according to Volhard's figures, commonly in the tonsils or upper respiratory passages. Trench nephritis seen during the war appeared to have been an exception; in these cases definite minor infections were not found as a rule, but skin infections might have played a part. If the origin of nephritis was accepted as being infective, renal damage seemed more likely to occur with certain organisms—for example, streptococci—than with others. He had followed up, at St. Thomas's Hospital, cases of tonsillitis for eighteen to twenty-one days after the acute attack. Albuminuria developed in 6 per cent. of cases in August, 16 per cent. in September, and 28 per cent. in October. There was neither oedema nor macroscopic haematuria: the patients merely appeared pale and listless. He believed it was cases of this kind that gave rise to chronic glomerular nephritis with no history of a previous acute attack. Exposure probably played a part in the development of the renal lesion. Cold had had a marked effect in the production of trench nephritis, and the seasonal incidence in his own cases supported this view. The cause of ischaemia of the glomeruli in nephritis was disputed. Some observers thought it was due to proliferation of the endothelium, resulting in obstruction; others that it was due to a constriction of the vessels. The rise of blood pressure indicated a general vaso-constriction; this rise preceded the albuminuria, and was therefore present before capillary damage had time to occur. Moreover, the diuresis which appeared late in the acute attack was suggestive of the sudden relief of spasm. The vaso-constriction was supposed by some to be caused by pressor bodies in the blood. Volhard thought these bodies were derived from disintegrating kidney tissue, and others believed that they were manufactured by streptococci during the provocative infection. The blood pressure, however, did not rise during the infection; there was a latent period which some had attributed to allergy, though he did not share this view. About 75 per cent. of cases of acute nephritis recovered in the first year, but if the condition became chronic and persisted for more than two years recovery could not be expected. Tonsillitis deserved more careful treatment. The urine should be examined during the three weeks following the attack, and the patient should be warned against exposure. Foci of sepsis should be removed; but in chronic cases the kidney lesion continued to develop, apparently after all infection had ceased.

Dr. J. C. SPENCE agreed that acute glomerular nephritis must be regarded as a manifestation of infection. The

latent period recalled that seen in acute rheumatism between the provocative infection and the development of cardiac manifestations. Other points of resemblance between the two diseases were the large number of cases which recovered and the smaller number which showed progressive chronic lesions. Early diagnosis, warmth, and good nursing were all that could be recommended in the way of treatment. The form of chronic nephritis found in renal dwarfism gave rise to no hypertension; the kidneys were small and the blood urea high. The patients died of true uraemia. There was no preceding acute illness which might cause nephritis, and perhaps this fact was correlated with the absence of hypertension.

Dr. T. Izod Bennett said that dietetic measures in the early stages were logical. He believed in almost complete starvation so long as haematuria persisted. A milk diet contained too much protein to be good for these patients. Haematuria not infrequently cleared up after removal of the tonsils. True uraemia was a metabolic disturbance, and could be ameliorated by limiting the nitrogenous intake. It was possible to produce some hardening of the bones in renal rickets by giving calcium in large amounts.

Professor F. R. Fraser thought that subacute and chronic nephritis might indicate subacute and chronic infection to the kidney. If so, patients should be kept at rest as long as there were signs of activity.

Dr. William Cramer said that severe nephritis could be produced experimentally in animals by giving a diet containing little magnesium. A few years ago it had been found that intramuscular injection of large doses of magnesium sulphate caused a fall of blood pressure in uraemic patients and cut short the symptoms. Professor A. W. M. Ellis considered that nephritis was a general capillary disease of the cardiovascular system, and that the rise of blood pressure was secondary to this. He believed in giving no food beyond fruit juice during an attack of acute nephritis, and in limiting the intake of fluids. The enlargement of the heart from dilatation was often striking. The patients should be treated as cases of heart disease, by rest and venesection. Dr. R. H. Paramore disagreed with the view that nephritis was due to infection. A considerable part of the blood entering the kidney went, not to the glomeruli, but to the medulla. He thought turgescence of the medulla was often a significant factor, and many cases might be saved by division of the renal capsule, allowing the kidney to expand and the circulation to proceed. Dr. Kenneth Tallerman said the time spent in bed during the acute stage appeared to have no effect on the recovery rate of children with nephritis. Dr. Leonard Findlay considered that there was no adequate proof that nephritis was infective in origin, nor did he think there were sufficient grounds for drawing an analogy with acute rheumatism.

The Chairman said that if no focus of sepsis was found in the tonsils it was worth while looking at the antra.

PATHOLOGY OF PHTHISIS

At a pathological meeting of the Liverpool Medical Institution held on November 17th, with the president, Professor R. E. Kelly, in the chair, Dr. T. B. Davie read a paper on the post-mortem pathology of pulmonary tuberculosis.

Discussing the pathogenesis of pulmonary tuberculosis, Dr. Davie recommended a simple classification of the conditions found at necropsy which, he suggested, would also provide a useful basis for clinical classification. He divided the various lesions found into: (1) chronic, which included ulcerative phthisis and fibroid phthisis, and (2) acute, which included miliary tuberculosis, bronchopneumonic phthisis, and pneumonic phthisis. The modes of dissemination of the infection from the primary focus were enumerated, and spread along the lymphatics was stressed as the characteristic process in tuberculosis. Dissemination along the subpleural channel accounted for early pleural adhesions and possibly for pleural effusions; spread along and in the fibrous interlobular septa explained the failure of these natural barriers in preventing the spread of tuberculosis. The features of arterial obliteration, haemoptysis, and miliary tuberculosis were explained by spread along the perivascular lymphatics, while spread along, and caseation into, the bronchial tree gave rise to the wide dissemination of tubercle bacilli by mechanical means, and explained the frequent bronchopneumonic and pneumonic terminations of otherwise chronic cases. Chronic ulcerative phthisis and fibroid phthisis differed in the amount of fibrous tissue reaction and caseation within the tuberculous nodes. The acute form of pulmonary tuberculosis was essentially bronchopneumonic, the pneumonic form being confluent bronchopneumonic phthisis. In this the confluence represented either the extreme of acuteness and widespread dissemination, or the gradual coalescence of originally discrete foci. Miliary tuberculosis was strictly a complicating accident of any form of tuberculosis. The various types of pulmonary tuberculosis were illustrated by lantern slides, mounted specimens, and microscopical sections. Dr. Davie also analysed his observations on 130 necropsies on phthisical patients with regard to the frequency of occurrence of the different types, the lobar distribution of lesions, the frequency of different complications, the presence of associated diseases—including malignant disease—and the common post-mortem findings in cases wrongly diagnosed as pulmonary tuberculosis.

In the discussion which followed, Dr. A. Adams stressed the importance of attendance in the post-mortem room by clinicians as a corrective against many errors to which they were prone; the statistics of adhesions found, and their character, were of great import in view of the present craze for artificial pneumothorax.

Dr. C. Allan Birch mentioned his experiences during a year's work in pulmonary clinics in North America, and described cases of acute benign exudative pulmonary tuberculosis. These cases were very rare and their post-mortem pathology unknown. Dr. Birch thought that the orthodox methods of the pathologist left the clinician without a means of estimating the type of pathology present in a living patient. He suggested that routine post-mortem *x*-ray studies and accurate correlation at necropsy with the lesions found in the lungs might lead to a method of classifying living cases on a pathological basis. Certain American phthisiologists attempted to read pathology on *x*-ray films, but they had no definite criteria. Dr. R. H. Mole said that Fried described experiments in which rabbits were infected with the tubercle bacillus by way of the trachea; the cells primarily responding to the acid-fast bacilli were the so-called alveolar epithelium. In his (Dr. Mole's) experience, meningitis complicating pulmonary tuberculosis had been more frequent than was shown in Dr. Davie's figures. Probably age had a significance. In a series of ten necropsies on patients dying as the result of tuberculosis, five were infants of the maximum age of 16 months. Four of these had meningitis, and these four also had tuberculosis of the tonsils. Tuberculous tonsils, cervical and bronchial glands, lungs, and meninges form a syndrome in young children more common than was usually thought. Dr. H. A. Osborn said that the problem of finding tubercle bacilli in granulomata was an important one, especially in anomalous lesions. One rarely found the bacillus in the giant cell, as usually pictured in textbooks.

Mr. P. H. Whitaker said that the comparison of the post-mortem findings with the radiograph was of extreme importance to the radiologist, and helped him to assess the relative significance of the various shadows and mottlings seen in the radiographs with the actual pathological lesions present. In a radiogram the lesion found post mortem was apt to be exaggerated; this was probably due to oedema round the lesion being mistaken for consolidation. That fact probably accounted for the different interpretation of the acute pneumonic type by the pathologist and the clinician. With regard to the "ring shadows" which had been mentioned, these were almost certainly due to the suction action of the two layers of the pleura on a thin fibrin exudate between them. It was surprising how accurate a picture of the pathological process was given by the *x* ray, but when tuberculous disease was associated with other pulmonary lesions, such as pneumonoconiosis and malignant disease, diagnosis was difficult.

Reviews

SURGICAL PITFALLS

There can be no doubt that a useful purpose is served by books on the pitfalls and errors of surgery if they appeal especially to those who, having passed their theoretical work, find themselves faced for the first time with the necessity of applying their knowledge practically, for the gap between the surgery of the textbook and the actual conduct of a surgical case is wide, and one which many find great difficulty in bridging—a point not emphasized enough in the teaching of the subject. If, however, such a book is to be of real value, it must be more than a mere recital of the stereotyped mistakes against which the textbooks give warning, and must therefore be written from the wealth of his accumulated knowledge by a surgeon of experience. The standing of MAX THOREK in American surgery, and his numerous contributions to the literature, are a sufficient guarantee for his authorship of *Surgical Errors and Safeguards*.[1] From such a source one expects to gain information which could be given only by a teacher of wise judgement and a sympathetic understanding of the troubles and difficulties of the inexperienced, and these expectations are amply fulfilled.

With the exception of the first chapter, dealing with surgical operations in general, the book is arranged upon a regional basis, and covers the whole field in so far as it concerns the general surgeon and the gynaecologist. In the chapter on "General Remarks" are collected together a number of primary considerations which amount almost to platitudes, but are none the less true on that account. Thus: "The first great error in surgery is unnecessary operation, and the next is the undertaking of a major operation which the surgeon is not technically fitted to perform"; and "Do not be in any great hurry to suture a wound; it is generally wiser to leave an antiseptic dressing on." Most surgeons, however, will agree that Deaver's advice, quoted by the author, that "the operator should be gloved by a sterile nurse with gloved hands," is a counsel of perfection which is unlikely to gain wide usage. The opinion that "pre-operative catharsis depletes the system of its necessary fluids, distends and irritates the bowel, predisposes to abdominal inflation and gas pains, and interferes with peristalsis" is in accordance with modern ideas; but at the same time the fact is not overlooked that patients with a badly coated tongue, foul breath, and other symptoms of intestinal toxaemia are not such good operative risks as those in whom a pre-operative regime has remedied these conditions.

In the regional section not only are the technical difficulties and pitfalls of the commoner operations fully described, but there is much of even greater value in the advice on indications for operation and the choice of method, together with the safeguards in each case. To take an example—under gastric operations the following sayings will find general acceptance:

> "Never do a gastro-enterostomy without definite indications. . . . Never fail to suture the transverse mesocolon to the stomach or jejunum. . . . Do not be guided by the statistics of anyone; let your own experience be your guide. . . . Do not put all of your faith in the roentgenogram; subjective and objective findings are often of greater importance."

This is sound teaching and an indication of the general character of the book, which is well illustrated and has a short bibliography at the end of each chapter.

[1] *Surgical Errors and Safeguards.* By Max Thorek, M.D. With a foreword by Arthur Dean Bevan, M.D. London: J. B. Lippincott Company. 1932. (Pp. xiii + 696; 668 figures. 45s. net.)

COMMON SKIN DISEASES

Despite Dr. ROXBURGH'S admitted reluctance to add to the many admirable textbooks of dermatology which already exist, we are very glad that he has written *Common Skin Diseases*.[2] We are sure that this very useful volume will be welcomed by large numbers of students and general practitioners, as it forms the best introduction to dermatology that we have seen for a long time. Although it deals with only 120 out of more than 300 known skin diseases, it includes practically everything that every doctor ought to know, and it is unlikely that disappointment will result from the omission of the remaining 180 skin conditions, which for the most part are mere pathological curiosities. The student or practitioner who can make proper use of Dr. Roxburgh's work, aided by ordinary clinical experience, will be able to deal successfully with most of the skin diseases that he is likely to come across, and may even obtain considerable local reputation as a dermatologist.

There are several original features worth mentioning; one of the best is the index of preliminary diagnosis for students. The section which the author calls "general diagnosis" although concise is also thorough and practical. We like his advice to take a good look at the eruption before proceeding to get a detailed history from the patient—a step which prevents waste of time in making a diagnosis of such conditions as scabies or pediculosis, which can be "spotted" from inspection alone. In addition to the "preliminary index" several schematic tables of diagnosis will be found dealing with special series of conditions, the differentiation of which may be a matter of some difficulty. These are very useful. In a book primarily intended for the general practitioner treatment is an extremely important feature. Here it is quite adequately dealt with. Both the section on general treatment and the directions given for treatment of the various diseases described are quite good and practical, and the author shows himself to be well up to date and full of common sense, whilst expressing a lack of faith in several highly vaunted modern specifics. Illustrations comprise a large number of excellent clinical photographs, mostly derived from the large collection at St. Bartholomew's Hospital, together with eight colour plates. One or two of the latter are, however, hardly up to the standard of the ordinary photographs.

To sum up, we have examined Dr. Roxburgh's book with great pleasure and can heartily recommend it both to students and to practitioners, while even those who consider themselves well versed in the problems of dermatology will in all probability be able to learn a good deal from its perusal. The author has a very readable style—racy, but never prolix—and a keen eye for weaknesses of human nature.

TEXTBOOKS OF PATHOLOGY

Recent years have seen the issue of a number of good textbooks on pathology for the use of students which mostly resemble one another in general plan, but exhibit considerable variety according to the particular aim of the authors. Among these may be classed Professor WILLIAM BOYD'S recently published *Text-book of Pathology*.[3] This does not claim to be in any sense a book of reference, the author holding the opinion that, for the student, a persistent endeavour to correlate lesions with symptoms is

[2] *Common Skin Diseases.* By A. C. Roxburgh, M.A., M.D., B.Ch., F.R.C.P. General Practice Series. London: H. K. Lewis and Co., Ltd. 1932. (Pp. xxx + 310; 110 figures, 8 plates. 18s. net.)

[3] *A Text-book of Pathology. An Introduction to Medicine.* By William Boyd, M.D., M.R.C.P.Ed., F.R.C.P., F.R.C.S. London: Henry Kimpton. 1932. (Pp. 946; 287 figures, 1 coloured plate. 45s. net.)

more important than memorizing a vast number of facts, and the aim of the book is to develop this faculty. The co-ordination of the various subjects of the medical curriculum is one of the educational problems of the present day, and the author considers that the study of pathology in the proper spirit is the best means of breaking down the partitions which separate these subjects; it forms a common meeting-ground for anatomy, histology, physiology, biochemistry, and clinical medicine. The study of pathology as a pure science has this disadvantage: that the student on entering the wards finds himself faced with what appears to him an entirely new and unfamiliar subject; he is unable to correlate clinical symptoms with pathological lesions. This disability the author endeavours to remove by presenting pathology in relation to the living patient. The exposition is in all parts very clear and concise, as is particularly noticeable in the articles on inflammation, the body constants in disease, the vitamins, jaundice, endometrial changes, the ductless glands, and the blood. A detail of nomenclature calls for a word of comment. Views are changing with regard to the nature of chronic mastitis, which is now considered by some to be a hyperplasia rather than a true inflammation, and an alteration in the nomenclature appears to be called for. The author has adopted the term "cystic hyperplasia," while admitting that it is not ideal, since cysts are not always present. Sir Lenthal Cheatle has already given the name "mazoplasia" to the lesion, a term which Professor Boyd regards as too forbidding for everyday use. Thus two new names have been introduced, neither of which appears to have much chance of general acceptance. It would seem preferable, at least in textbooks, to retain the old labels until they can be replaced by others which are generally accepted.

Reference may be made here to the issue of the fifth edition of MACCALLUM'S well-known *Text-book of Pathology*,[4] the fourth edition of which appeared in 1929. The literature of the last four years has been reviewed, and the sections on tuberculosis, syphilis, nephritis, and endocarditis have been thoroughly revised. The account of disturbances of the organs of internal secretion has been brought up to date, and a new section on lipoid metabolism has been added. Many additions have been made to the illustrations, which form so distinctive a feature of the work.

THE THYROID PROBLEM

La Thyroide,[5] by BLANCHARD, PENAU, and SIMONNET, is the second volume of Series XVII of "Les Problèmes Biologiques." These valuable monographs are published by Les Presses Universitaires de France, and the particular series in question treats of the problems of the glands of internal secretion. *La Thyroide* is an excellent and up-to-date summary, dealing with what may be termed the "laboratory" rather than the clinical aspects of the problem. There is a full bibliography, and the authors have taken the greatest pains to ensure that their survey shall be comprehensive. In the nature of things the book cannot remain up to date for very long, but it will make an excellent starting point for the next survey, when that becomes necessary. It is a worthy contribution to the effort which is being made by scientific bodies and individuals all over the world to keep pace with the present huge output of scientific work. No man who is actually engaged in research work, and perhaps in teaching and administration as well, can now hope, single-handed, to cope with the literature of more than a small part of his subject. But a book such as that under consideration enables him to review his own field, and to make sure that he is not neglecting important developments from sheer inability to cover the ground. It would be, one imagines, of great service if similar reviews of this and of kindred subjects could be undertaken from the clinical standpoint. A critical summary, for instance, of the position of endocrine therapy as a whole would surely do much to prune away what is useless from therapeutic practice, and to stimulate fresh advances along profitable lines. In reading *La Thyroide* we cannot but be impressed with the advantages which the French language has over English or German for the purpose in hand. The same book written in either of the latter languages would have been appreciably more bulky.

[4] *A Text-book of Pathology*. By W. G. MacCallum. Fifth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1932. (Pp. 1,212; 652 figures. 50s. net.)

[5] *La Thyroide*. Par L. Blanchard, H. Penau, et H. Simonnet. Vol. ii, Series XVII, Les Problèmes Biologiques. Paris: Les Presses Universitaires de France. 1932. (Pp. 400. 75 fr.)

PNEUMONIA IN EARLY LIFE

The study of inflammatory conditions in the lungs of infants has been rendered much easier in recent years by the employment of *x* rays, and in a valuable monograph entitled The Pathogenesis, Clinical Features, and Classification of Inflammations of the Lung in Early Childhood,[6] Dr. ALFRED WISKOTT has made full use of this diagnostic aid. His material comprises nearly 300 cases of pneumonia in infants and young children seen in the Munich University Children's Clinic from July, 1925, to June, 1930. After an introduction on the subject of the general reaction of young infants to inflammation, Dr. Wiskott describes pneumonia under the headings of "primitive form," "maturer form," and "mature form," the type of lesion varying progressively from a pneumonia spreading from the hilus through focal bronchopneumonia to early croupous pneumonia. A scheme of diagrams based on *x*-ray and pathological findings makes Dr. Wiskott's test very clear, and his conclusions are of great interest. He is particularly sound on the influence of protective bodies obtained from the mother upon neo-natal pneumonia and pneumonia of the first three months. This is a very good example of the type of comprehensive monograph we have learnt to expect from the German universities.

THE YOUNG PRACTITIONER

A short time ago we reviewed a small volume of advice to medical men and women commencing practice, written with surprising success and completeness by a physician who had spent only five years or so in general medical practice. In a slightly larger book Dr. G. FRANCIS SMITH gives his *Hints to the Young Practitioner*[7] as the result of forty-six years of such practice. Most of these hints, therefore, if not all, should be worth taking; and, in fact, they are. This book, happily, does not, as the former volume succeeded in doing, produce a general impression that practice consists almost wholly of difficulties, pitfalls, snags, or undeserved misfortunes; and it gives a fair idea of many of the daily encounters of a large, busy, and successful practice. The trouble is that it is a little difficult to find or to pick out the particular advice that may be needed. In a work that purports to be merely a collection of hints it would, of course, be wrong to expect all the virtues of a systematic treatise, but, in fact, the arrangement of the book is not altogether good. Matters which might well have been

[6] *Zur Pathogenese, Klinik und Systematik der frühkindlichen Lungenentzündungen*. Von Privatdozent Dr. Alfred Wiskott. Berlin: S. Karger. 1932. (Pp. 163; 55 figures. M.12.)

[7] *Hints to the Young Practitioner*. By G. Francis Smith, M.R.C.S., L.R.C.P. London: H. Milford, Oxford University Press. 1932. (Pp. 150. 5s. net.)

brought into close relation with one another are sometimes widely separated, and others which have no very striking or logical connexion are placed in immediate conjunction. The result is that a certain effect of patchiness or even irrelevance is at times produced. Further, the author not infrequently appears to be uncertain whether his purpose is to give hints on the treatment of a morbid condition or on the management of patients and practice. Here and there he falls between the two stools. There are a few points on which it would be possible to differ from Dr. Smith's advice or conclusions. For example, speaking of consulting hours, he twice says, rather emphatically, that "the rule should be to admit no fresh visitors after the stated time." Such a procedure may be salutary in the case of individual patients, but applied generally is of doubtful wisdom. Again, the entrusting of record cards into the hands of insured patients has its dangers. Further, Dr. Smith assumes that the young practitioner is almost wholly ignorant of midwifery, would rather have nothing to do with it, and therefore had better hand it all over as speedily as may be to "a few experts." At the present time it is probable that, in general, these statements are incorrect and the advice mistaken. Lastly, it is to be hoped we are passing from the position implied in the statement: "It is generally admitted that the science of medicine is the study of disease, with a view to curing or eliminating the same." As a matter of fact, Dr. Smith himself concludes by preaching a different doctrine; and as a whole his body of advice can be commended to the young practitioner as well balanced, practical, and helpful.

Notes on Books

The Edinburgh textbook on *Diseases of the Nose, Throat, and Ear*,[8] edited by Dr. LOGAN TURNER, which evolved from a small book by the late W. G. Porter, has attained an established reputation, and has now reached a third edition. It has naturally been revised, the most important addition relating to an account of the physiology of the otolith system in the section on the ear. This section, by Dr. J. S. Fraser, has always stood out as perhaps the most masterly account of diseases of the ear that could be possibly compressed into so short a space. The section on the larynx, which needed revision most, seems to have received it least; at all events such an absurdity as ligature of the superior laryngeal arteries for malignant disease might have been eliminated. The sections on the nose and accessory sinuses, the special care of the editor himself, naturally carry great authority, and are admirable. The new edition will surely maintain the popularity of the earlier issues.

In the second edition of his *Diseases of the Blood*[9] Dr. PINEY has made many changes; there are one-third more pages, which are also larger in size, there are three times the number of illustrations, and among the new ones are nine of distinguished haematologists, the portrait of Professor J. L. Gulland, in the chair of the Royal College of Physicians of Edinburgh, forming the frontispiece. The text has been entirely rewritten. Beginning with an account of the blood and its formation, the author goes on to describe the anaemias, the leucoses, including multiple myeloma as well as the various forms of leukaemia, polycythaemia, haemorrhagic diseases, and some diseases of the spleen. In the last group the recent classification, admittedly tentative, by Dr. J. W. McNee receives due attention; reference is also made to the rare and allied conditions of Gaucher's disease, Niemann's disease, and Christian's syndrome, and to haemochromatosis, as all showing pathological changes in the reticulo-endothelial system. In the chapter entitled "Some diseases of the reticulo-endothelium," lymphadenoma and Mikulicz's disease are instanced. The illustrations are excellent. There are three appendices—on haematological technique, literature, and Professor Gulland's Harveian Oration at the Royal College of Physicians of Edinburgh in 1930 on "The circulating fluid."

As deputy surgeon at the Royal Hospital, Chelsea, where the pensioners provide such ample material, Major F. MARTIN LIPSCOMB has collected data for his useful book, *Diseases of Old Age*,[10] which deals with the subject from a clinical aspect, and as far as possible avoids discussion of aetiology and pathology. The diseases considered in the sixteen chapters are those with a high incidence in advanced life and those which are conspicuously modified by old age or are of special interest in differential diagnosis. In addition to his own experience the author has drawn on the opinions of others, and has scrupulously acknowledged these sources at the end of each chapter. Nearly a fourth of the volume is devoted to diseases of the cardiovascular system, the nervous and respiratory systems each occupying about one-eighth of the text. Gout is described in some detail, as it is by no means rare among the Chelsea Pensioners; thus among 134 admissions for all causes to the infirmary of the Royal Hospital there were nine of classical gout. There is an interesting footnote about the once famous Chelsea Pensioner gout powder, the secret of which was bought for £500; it contained guaiac resin, rhubarb, and cream of tartar, but its use at the Royal Hospital ceased more than seventy years ago. With regard to appendicitis medical rather than operative treatment is advocated as on the whole the more successful course. The last chapter contains much sound advice on the general management of the aged patient.

The *Traité de Physiologie* that is being edited by Professors G. H. ROGER and L. BINET will comprise eleven volumes when completed. The sixth is entitled *Circulation*.[11] It is a volume of about 600 pages, and contains nearly 300 illustrations. Nearly half the space is occupied by an article on the heart, by Dr. H. Hermann of the University of Algiers. Professor H. Frédericq of Liége contributes a short article on electrocardiography. Professor de Waele of Ghent deals with the arterial and venous circulation, and Professor Demoor of Brussels with the physiology of the capillaries. The articles maintain a high standard throughout, and in particular give a full account of work published in French, which sometimes does not receive adequate attention in German encyclopaedias. We feel, however, that the editors would have been well advised to devote two volumes to the material compressed within this single volume. As it is, the work is scarcely full enough to provide an encyclopaedia for general reference, yet it is very large for use as a textbook for general reading.

The second volume of the forty-second series of *International Clinics*[12] consists of ten parts, devoted respectively to biochemistry and colloids, diagnosis and treatment, ulcerative endocarditis, lectures on extensive pyelonephritis and primary bilateral carcinoma of the adrenals, from Dr. Winfield Scott Pugh's clinic, recent

[8] *Diseases of the Nose, Throat, and Ear.* For Practitioners and Students. Edited by A. Logan Turner, M.D., LL.D., F.R.C.S.E. Third edition, revised and enlarged. Bristol: John Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1932. (Pp. xxvi + 465; 250 figures; 19 plates, 8 in colour. 20s. net.)

[9] *Diseases of the Blood.* By A. Piney, M.D., M.R.C.P. Second edition. London: J. and A. Churchill. 1932. (Pp. viii + 310; 65 figures, 14 in colour. 18s.)

[10] *Diseases of Old Age.* By F. Martin Lipscomb, M.R.C.P. London: Baillière, Tindall and Cox. 1932. (Pp. vii + 472. 12s. 6d. net.)

[11] *Traité de Physiologie, Normale et Pathologique.* Published under the direction of G. H. Roger and Léon Binet. Vol. vi: *Circulation.* By J. Demoor, Ph. Fabre, H. Frédericq, H. Hermann, P. Mathieu, and H. de Waele. Paris: Masson et Cie. 1932. (Pp. 599; 280 figures. 90 fr.; bound, 110 fr.)

[12] *International Clinics.* Edited by Henry W. Cattell, M.D. Vol. ii, forty-second series. Philadelphia and London: J. B. Lippincott Company. 1932. (Pp. viii + 307; illustrated. £2 10s. set of four volumes; 12s. 6d. per volume.)

progress in surgery, light therapy, the costs of medical care, progress in paediatrics, and a monograph by Harry Gold of New York on the control of haemorrhage by thromboplastic agents. Among the papers calling for special notice are those on the fundamentals of nutrition, by E. V. McCollum of Baltimore; eating as a therapeutic measure, by James J. Walsh of New York; metabolic studies in the treatment of obesity, by Carl P. Sherwin of New York; and indications and safeguards for hernia operations in the aged, by Leigh F. Watson of Los Angeles.

Food, Health and Vitamins,[13] by Professor R. H. A. PLIMMER and Mrs. PLIMMER, is a short volume that has now reached its fifth edition. The purpose of the book is to explain to a wide public the nature and significance of vitamins, and the necessity for a properly balanced diet. The authors have taken pains to keep their volume abreast of current knowledge, and the present edition includes a full account of the important advances in our knowledge regarding the biochemistry of vitamins that have been made in the last three years. Amongst the recent work discussed are the relation between vitamin C and the hexuronic acids, the chemical relations between vitamin A and carotene, and the influence of vitamin B_2 on pernicious anaemia. The authors are to be congratulated on their success in keeping the size of the book within its original limits and yet maintaining a good standard of accuracy.

In the preface to the forty-ninth edition of *The Official Year-Book of the Scientific and Learned Societies*,[14] just issued, the publishers make grateful acknowledgement of the cordial reception which has been extended to the year-book in its new form. The economy in size and price has been found to entail no loss of essential information; indeed, this latest edition will be found to contain particulars of many additional societies, and to be more comprehensive than ever.

[13] *Food, Health and Vitamins.* By R. H. A. Plimmer, D.Sc., and Violet G. Plimmer. Fifth edition. London: Longmans, Green and Co. 1932. (Pp. xii + 143; 12 figures. 3s. 6d.)

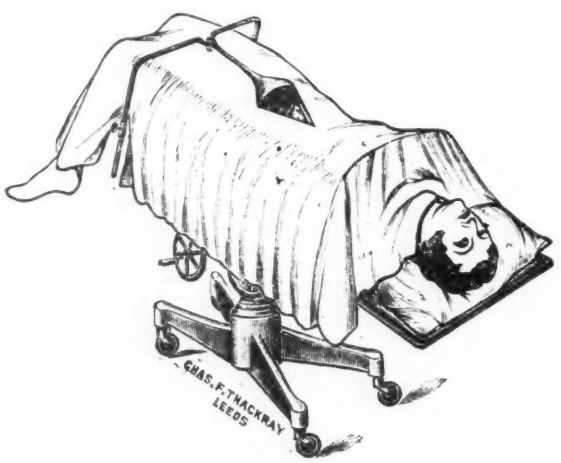
[14] *The Official Year-Book of the Scientific and Learned Societies of Great Britain and Ireland.* Compiled from Official Sources. Forty-ninth annual issue. London: Chas. Griffin and Co., Ltd. 1932. (Pp. 167. 10s. net.)

Preparations and Appliances

A SUSPENSION-RETRACTOR FOR PELVIC OPERATIONS

Mr. ALFRED GOUGH, Ch.M., F.R.C.S., F.C.O.G., senior surgeon, Hospital for Women, Leeds, writes:

In the more difficult pelvic operations the Trendelenburg position and some form of retractor are necessary in order to obtain proper access to the field of operation. The usual practice has been to support the patient in the inclined position by means of shoulder rests; and, when a Doyen retractor has been used, this has been attached to a special leg-piece or to a chain and weight. It occurred to me to simplify such operations by using the retractor to suspend the patient, the patient's weight supplying the retracting



force. With the help of Mr. C. F. Thackray of Park Street, Leeds, the idea has been developed in the following manner.

A bridge made of a half-inch steel bar is fixed in the slots, which at other times accommodate the leg-rests; the details of this fitting will depend on the type of operation table used. The stem of the retractor terminates in a hook, which engages in a small loop in the middle of the bridge. The blade is similar to that of a Doyen retractor, but is somewhat deeper, so as to obtain a secure purchase on the back of the pubic bones; the increased depth also helps to keep the bladder out of the way.

The operation is begun with the table in the horizontal position. The abdominal incision is made and the "tetra" cloths attached to the edges of the wound. The bridge and retractor (both sterilized by boiling) are placed in position, and then the table is tilted to the required inclination. The retractor cannot be removed until the table has been lowered almost or quite to the horizontal.

I have used this method regularly for more than a year, and no disadvantages have become apparent.

A "SAFETY-FIRST" X-RAY UNIT

A "shockproof" dental *x*-ray unit, under the designation "Mark III," has been introduced by Watson and Sons (Electro-Medical), Ltd., Parker Street, Kingsway, W.C., to meet the demand for an apparatus affording complete protection against both *x*-ray and electrical dangers. At any time while the apparatus is in use any part of it may be touched by the operator or patient without risk of injury. The tube is of the metalix, hot-cathode type, totally enclosed in an earthed metallic covering. The cables which lead the current to the tube from the high-tension transformer are enclosed in a flexible metal casing, which also is earthed, and a safety switch ensures that when the door of the cabinet is open the current shall be automatically cut off so that no danger can arise from touching any part of the interior. There are no exposed wires carrying high-tension current. Only the beam actually employed in making the radiographs is allowed to emerge from the tube. In addition to these safety precautions, the unit incorporates many adjustments, which make it of special service to the dental radiographer.

VITAMIN A CONCENTRATE

"Essogen" is a concentrate of vitamin A prepared by Messrs. Lever Brothers, Ltd., Port Sunlight, Cheshire. It has a "blue value" of 2000, which is about 200 times the value obtained with cod-liver oil. The preparation is also biologically standardized. The makers claim that it is the most potent concentrate of vitamin A yet offered. This preparation has been tested clinically in an exhaustive fashion, for the makers supplied it under the name Lever's preparation "Y" for the extensive investigations made by Mellanby and his co-workers on the prevention of infection, and in particular on the prevention of puerperal sepsis. Research during the last few years has suggested the probable value of intensive medication with vitamin A in the treatment of numerous forms of sepsis, and this preparation is admirably adapted for that purpose. It is put up in small capsules, each of which is approximately equal, as regards vitamin A content, to a fluid ounce of cod-liver oil. The price of the preparation is 36s. for a bottle of 500 tablets, which works out at a cost of 12s. for the vitamin A equivalent of a gallon of cod-liver oil.

A DAMP-REMOVING DEVICE

We have examined samples of a device known as the K.D. air desiccator, which should prove useful for ordinary domestic purposes, and also for keeping instrument cabinets, etc., free from damp. Hygroscopic crystals, in a flat metal perforated container of cylindrical shape, change from dark blue to a pinkish colour when charged with moisture. An hour and a half's heating in the oven restores their damp-absorbing properties. They are free from odour, and can therefore be used in food cupboards, medicine drawers, and cigar cabinets. The distributors are Elmesan (London) Ltd., 66, Victoria Street, S.W.1.

THE EMPLOYMENT OF PATHOLOGISTS IN CORONERS' COURTS*

BY

SIR BERNARD SPILSBURY, M.B., F.R.C.P.

Although many fundamental facts of pathology have been established from very early times, the modern development of that branch of medicine and the immense amount of detailed pathological knowledge available at the present time dates from about the middle of the last century, when enthusiastic workers devoted their lives to the investigation of pathological problems; from these beginnings the body of pathologists arose, and the investigations, which at first were chiefly anatomical and histological, have since expanded to include the various branches of pathological and bacteriological work. It was only very slowly that pathological knowledge was applied to medico-legal problems, and in this country the employment of pathologists by coroners and police has developed within living memory, and is still very limited when the country generally is considered, though they are more frequently employed in London and the larger urban districts. Yet it is of even greater importance that pathologists should be employed in medico-legal than in hospital work, for whereas unskilled hospital work results in loss of scientific knowledge, similar work in medico-legal cases may entail very serious legal consequences.

Medico-legal cases fall mainly into two groups—namely, that in which death is known or suspected to be unnatural, and that in which the death is reported to the coroner because the cause is unknown, although an unnatural cause is not suspected. It is in the second group, in my experience, that rare or supposedly rare lesions are so frequently responsible for death. Two consecutive cases which I had recently, illustrate some of the difficulties which may be encountered in this group.

The first of these was a woman, married, and 34 years of age, whose illness dated from about three months before death. She first became depressed, gradually lost weight, and was treated for anaemia. During this time she had an attack of vomiting and diarrhoea, which was thought to be due to food poisoning, sardines being blamed. For six months she had not menstruated, and she persisted in believing that she was pregnant. On the day before her death she again became acutely ill, with abdominal pain, nausea, vomiting, and diarrhoea; she collapsed and died suddenly during an attack of vomiting.

The death was obscure, one suggestion being that she had become infected during an attempt to procure abortion. The necropsy showed that she was not pregnant and had not aborted. The skin was generally rather dark in colour, especially the face, and I remarked on the possibility of Addison's disease of the suprarenals being responsible for her death; this proved to be the case, the disease taking the rare form of simple atrophy of the glands, which were represented by two very small ill-defined reddish masses.

In this case an accurate knowledge of the normal position of the suprarenals was necessary to enable the remains of the glands to be found, removed, and subjected to microscopical examination. Had the disease not been found the case might have been regarded as one of enteritis from changes found in the lower part of the small intestine.

The second was a boy, 12 years of age, who was quite well until about fifteen hours before death, when he complained of headache; he steadily became worse, and attacks of vomiting supervened. He then collapsed and was sent to bed, where he was found dead three hours later.

At the necropsy very slight changes were found. There was some dilatation of the heart cavities, and there were a number of petechiae on its surface; these were so minute as to require a hand lens for identification. There was also slight cloudy swelling of the liver. Within the skull the cerebral convolutions were obviously flattened, but no cause of the increased intracranial pressure was found. I then opened the spinal canal, and found that the cord and its membranes were normal; but the cerebro-spinal fluid accumulated at the bottom of the canal appeared to be slightly turbid; I therefore collected some of the fluid in a pipette. Subsequent microscopical examination showed marked fatty degeneration of the heart muscle. In the cerebro-spinal fluid I found large numbers of polynuclear cells, and a very few intracellular diplococci having the characters of Weichselbaum's organism of acute cerebro-spinal meningitis.

The case thus proved to be one of fulminating cerebro-spinal fever, with less change in the central nervous system than I have seen in any other case. Without the subsequent laboratory investigation it would have been impossible to give the cause of death, and a well-equipped laboratory is, in my opinion, essential to the investigator of medico-legal cases, in addition to a considerable experience of post-mortem work and morbid histology.

It is not reasonable to expect a general practitioner to deal satisfactorily with medico-legal cases, though it is true that certain pathological conditions, such as cerebral haemorrhage or ruptured gastric ulcer, can be recognized. But the disease which has been diagnosed with confidence during life is not always found at the necropsy.

Only yesterday I made a post-mortem examination on a woman who was said to have died from a cerebral haemorrhage and to have had another stroke six months previously. The case was reported only on account of a recent fall, which it was thought might have influenced her death. No cerebral haemorrhage was found, and no indication of a previous haemorrhage; death was due to chronic alcoholic poisoning.

The following pathological conditions are a few of the very many which may prove to be stumbling-blocks to the general practitioner. Encephalitis lethargica, the symptoms and course of which show great differences, is sometimes reported owing to its obscure nature. This disease can only be diagnosed by extensive microscopical examination of the brain. Subdural meningeal haemorrhage is very commonly attributed to injury, but in my experience is more often due to rupture of a cerebral aneurysm. The aneurysm may be literally no larger than a pin's head, and it can be very difficult to find, embedded in the meningeal haemorrhage, requiring a thorough cleaning of the blood vessels over the base of the brain. Cerebral haemorrhage into a tumour is not a very rare cause of death. The tumour tissue at the margin of the haemorrhage may require microscopical aid to diagnosis, but the condition may be suspected if the arteries are free from disease or the haemorrhage occurs in a very unusual part of the brain, as in the subcortical white matter. Internal hydrocephalus sometimes causes extremely puzzling symptoms, and cases are not very rare in coroners' work. The cerebro-spinal fluid sometimes soaks completely into the brain after death, and the dilated ventricles are displayed only by appropriate methods of incising the brain. Diseases in the spinal canal form a group in which cases are met with occasionally, and the spine should be opened in any case in which the cause of death is obscure after the examination of the body is otherwise complete.

In the heart, disease of the coronary arteries associated with a small lumen or with thrombosis is by far the commonest cause of sudden and unexpected death. The

* Read in the Section of Forensic Medicine at the Centenary Meeting of the British Medical Association, London, 1932.

disease may be very obvious, but in some cases a very thorough search of the arteries and their principal branches must be made before the cause of death can be ascertained. Syphilitic aortitis with reduction in size of the orifices of the coronary arteries is another fairly common cause of sudden death. Disease of the heart muscle is an important cause of death, and one which it is often impossible to diagnose without microscopical examination. The muscle may be soft merely from post-mortem changes, and pale owing to the small amount of blood in its wall at the moment of death. On the other hand, a muscle of good colour and firm consistence may conceal advanced fatty degeneration. For this reason I always examine the heart muscle microscopically after treatment for a time with osmic acid.

It is often very difficult for the pathologist to help the general practitioner if he is required to make a second post-mortem examination; the more thorough the first examination the greater the difficulty, and I have had cases in which the cause of death remained conjectural. Nor is it satisfactory to ask the pathologist to make histological examination of material removed by another, the material sent not always being representative; in such circumstances the report of the pathologist may be misleading. The general practitioner is in a dilemma when, having made a post-mortem examination in an apparently straightforward case, he finds no satisfactory explanation of death. Sometimes he states frankly that he has found no cause. Sometimes, having missed the actual cause of death, he fastens upon a common chronic process such as chronic bronchitis, and the death is ascribed to that cause; or occasionally he invents a cause of death, as in the case of an infant in whose body no serious disease was apparent. A thymus gland was present, and the operator cut into the gland and squeezed, whereupon a milky fluid escaped, and a diagnosis was made of "thymusitis," and was accepted by the coroner.

These remarks are intended only to point out some of the difficulties with which the investigator has to contend in medico-legal examination of the dead body, and to support the thesis that the proper person to make all such investigations is an experienced pathologist who can also carry out any laboratory investigations which may be necessary.

TUBERCULOSIS OF BOVINE ORIGIN

DEPUTATION TO MINISTERS

Sir Hilton Young, the Minister of Health, Earl De La Warr, Parliamentary Secretary of the Ministry of Agriculture and Fisheries, and Mr. A. N. Skelton, Parliamentary Under-Secretary of State for Scotland, received a deputation on November 24th from the People's League of Health. The deputation was introduced by Sir Thomas Horder, and the other speakers were Lord Moynihan, Dr. Savage, Sir Archibald Weigall, Professor Hobday, and Dr. Norman Wright.

Its object was to submit to the Government a resolution passed at a meeting called by the People's League of Health, held at the Mansion House last summer. The resolution was in the following terms:

> "That this meeting representative of all interests involved, held at the Mansion House, London, on July 11th, 1932, do approve of the Report of the People's League of Health on Tuberculosis of Bovine Origin in Great Britain, and urge upon His Majesty's Government the imperative need of giving early practical effect to the proposals it contains."

Sir Thomas Horder said that the report, prepared by the People's League of Health and now submitted to the Government, contained recommendations designed to ensure the safety of the milk supply. The League hoped that if its recommendations were adopted and the public could be assured of the safety of milk, there would be an increase in the consumption of milk in this country, which would be in the interests of the consumer and the producer alike. Lord Moynihan said that it was the considered opinion of the medical profession that steps ought to be taken to ensure a pure milk supply or such treatment of milk as would render it safe for consumption. Impure milk was responsible for the spread of many diseases, and, in particular, surgical tuberculosis. The ideal method of preventing milk-borne disease would be to ensure the purity of raw milk, but, failing this, pasteurization should be adopted. Objections had been brought against pasteurization, but he did not believe that they had weight. Any diminution in the nutritive value of milk due to pasteurization could easily be remedied by the supply of other articles of diet. It was, however, essential that the process of pasteurization should be carefully controlled. Dr. Savage said that at present no urban area had power to protect its milk supply. The deputation desired to urge upon the Government three main lines of action: (1) that active steps should be taken to reduce bovine tuberculosis; (2) that there should be active encouragement of tuberculin-tested herds; and, (3) that milk should be pasteurized. The deputation was not, however, asking for universal pasteurization at present, but only that municipalities should be enabled to apply to the Minister of Health for power to require that all milk sold in their districts should be derived from tuberculin-tested herds or be pasteurized. Sir Archibald Weigall, speaking on behalf of the Royal Agricultural Society of England, endorsed what had been said. The ultimate ideal should be tubercle-free national live stock, but the report was agreed upon as the best half-way house. The ideal was to be attained as laid down in the final report of the Committee on Production and Distribution of Milk, 1919. The difficulties of administration and finance were recognized, but it was felt that uniformity in the application and interpretation of the tests proposed for dealing with this matter was essential. Professor Hobday explained some of the detailed recommendations contained in the League's report, and Dr. Wright said that experience in Scotland fully confirmed the need of action on the lines recommended in the report.

Ministers' Replies

The Minister of Health said that he fully appreciated the importance of the milk supply and of the questions raised by the deputation, and he was very conscious of the wide knowledge and experience which the members of the deputation possessed. The report which the League had submitted was one of great value. He was in full sympathy with the desire of the deputation to increase the consumption of milk, and he agreed that it was essential to give the public confidence in the safety of the milk supply. The deputation would not expect him to express at present any definite opinion upon the recommendations contained in its report, though the recommendations were generally in consonance with the policy of the Ministry of Health. He had been much interested to hear the expert views of the deputation on the question of pasteurization, and he proposed to ask the Cattle Diseases Committee of the Economic Advisory Council to consider the subject and advise upon it. It would be necessary also, before coming to any definite conclusions, to await the report of the Milk Reorganization Commission. Lord De La Warr said that, while the financial aspects of the questions raised by the deputation could not be ignored, the Minister of Agriculture fully appreciated their importance, and would welcome any practical steps that would assist the sale of milk or improve the health of stock. The Ministry would be ready to do anything in its power to co-operate with the People's League of Health and other bodies interested in advancing these objects, apart from any measures which the Government itself might find it possible to take.

Dr. C. O. Hawthorne, representing the British Medical Association, expressed the thanks of the deputation for its reception by the Ministers.

B. J. RYRIE: ADAMANTINOMA OF THE TIBIA

FIG. 1.

FIG. 2.

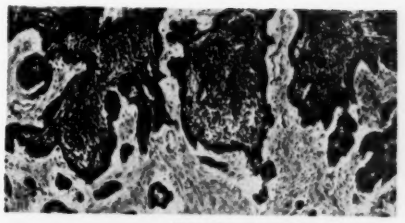


FIG. 3.

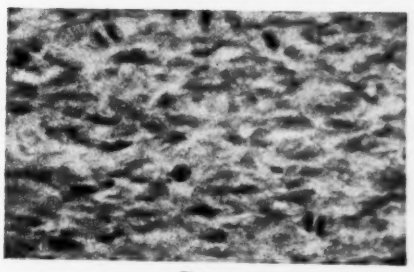


FIG. 4.

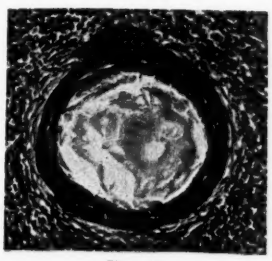
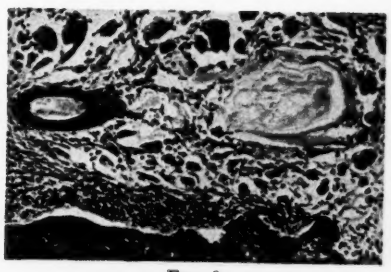


FIG. 5.



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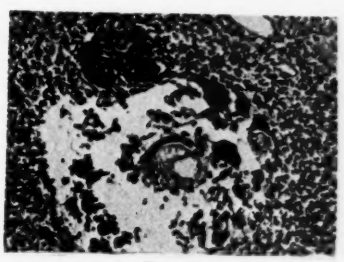

FIG. 7.

FIG. 8.

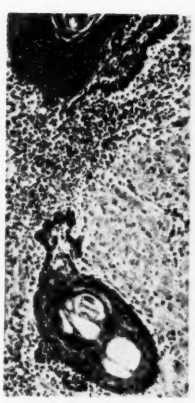

FIG. 9.

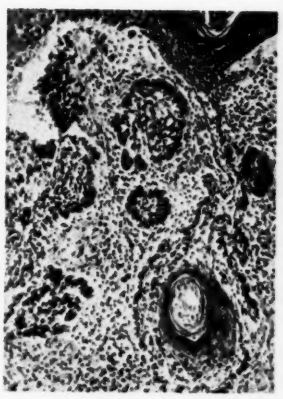

FIG. 10.

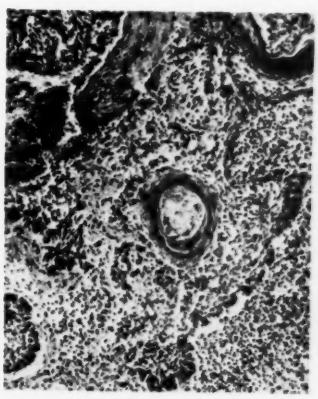

FIG. 11.

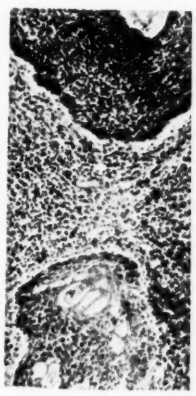

FIG. 12.

FIG. 13.

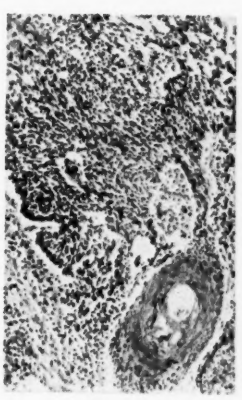

FIG. 14.

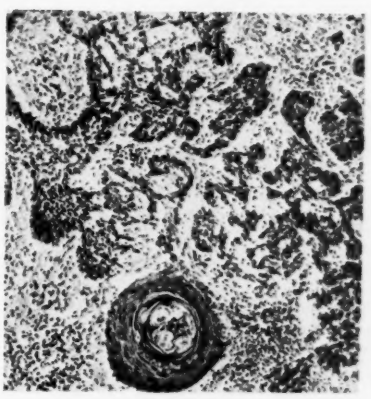

FIG. 15.

For description of figures, see key in text of article.

FIG. 1.—W. R.: Radiograph taken on January 6th, 1925.

FIG. 2.—W. R.: Radiograph taken on November 16th, 1929.

FIG. 3.—J. W.: Radiograph taken on September 19th, 1927.

FIG. 4.—J. W.: Radiograph taken on March 5th, 1931.

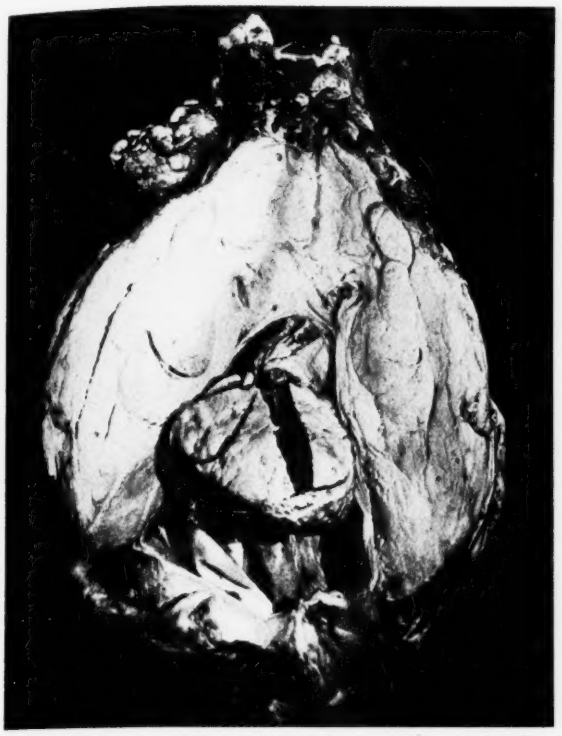

FIG. 1.—Tumour growth overlying and surrounding pericardium opened up to show its relationship to heart.

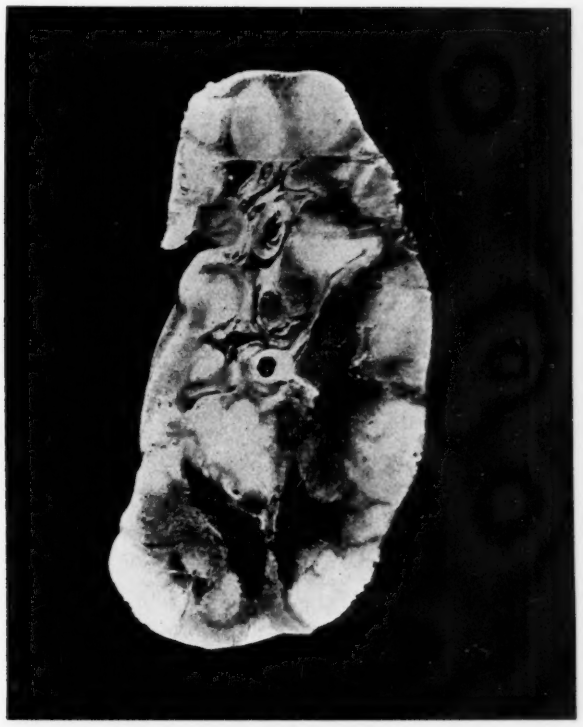

FIG. 2.—Medial section of one kidney showing pale and swollen character of cortex due to infiltration with tumour cells.

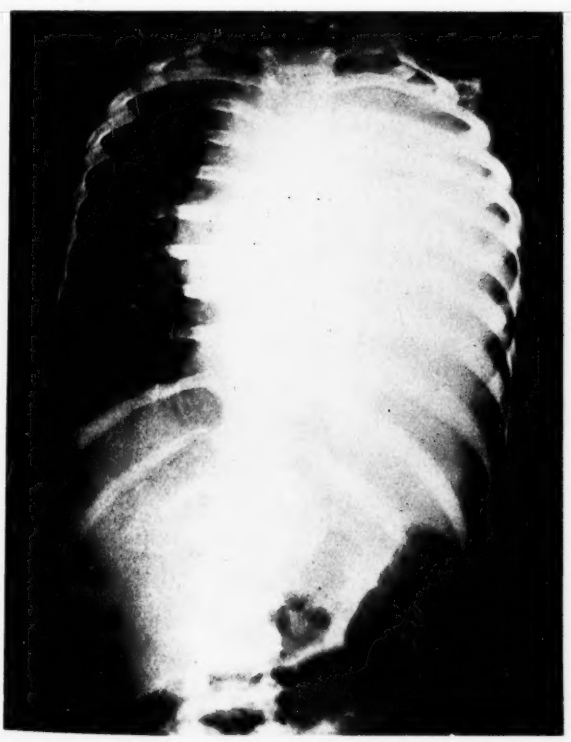

FIG. 3.—Radiograph of chest.

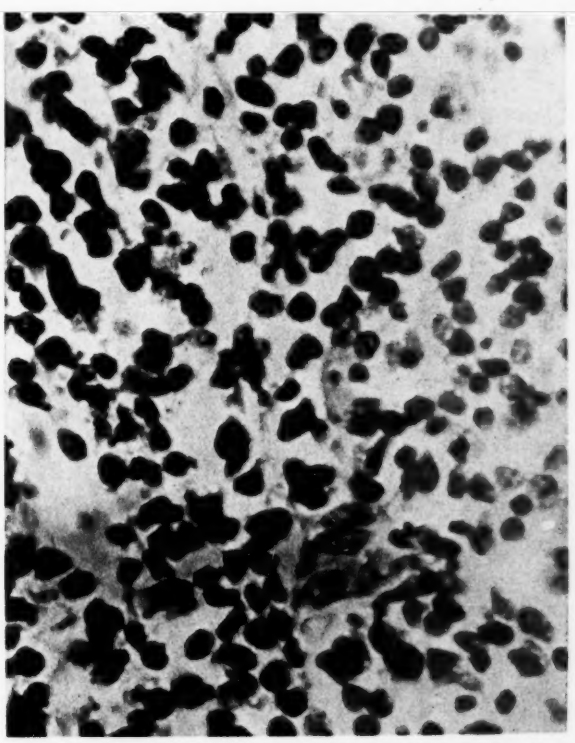

FIG. 4.—Photomicrograph of tumour growth overlying pericardium, showing the character of cells.

OSWALD ADDISON: A PATIENT WITH FOUR URETERS

FIG. 1.—Pyelogram after intravenous injection of uroselectan. On right side two pelves and two ureters show clearly; the lower pelvis is dilated. On left side the two ureters can only be traced for part of their course.

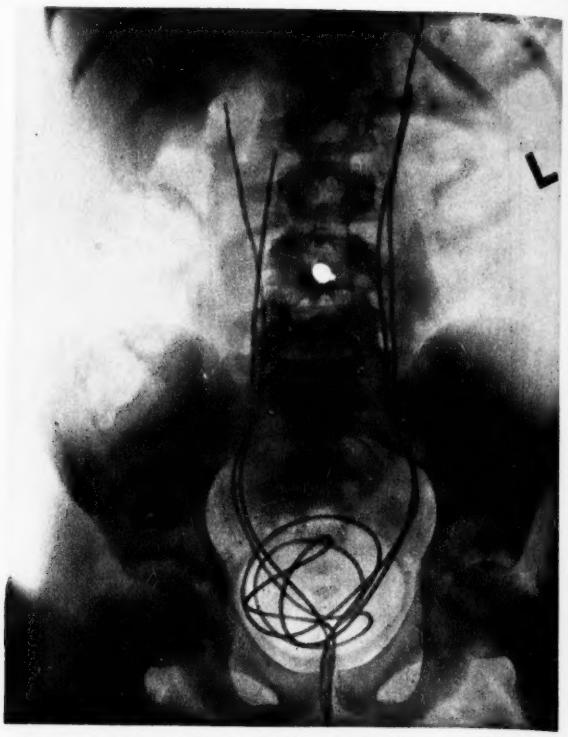

FIG. 2.—Opaque catheters in position, showing four separate ureters.

OSWALD ADDISON: A PATIENT WITH FOUR URETERS

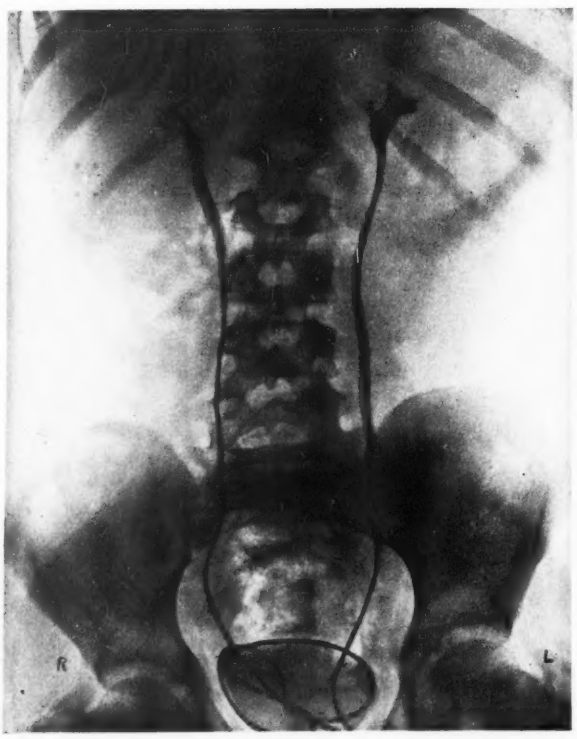

FIG. 3.—Catheters passed up median ureters, and 5 c.cm. sodium iodide injected in each side. The upper pelves only are filled, and do not show any communication with the lower pelves.

J. GOODWIN TOMKINSON: MONILETHRIX

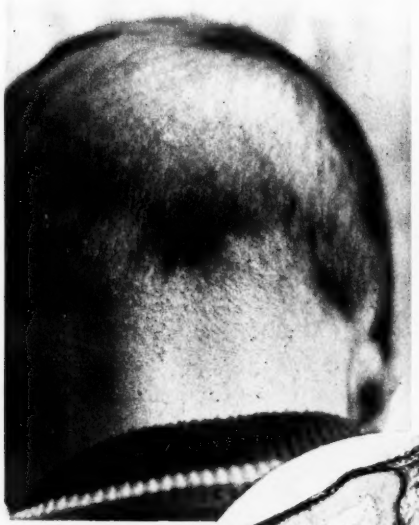

FIG. 1.—Monilethrix, in a aged 5½ years, sent for mic scopical examination; susp ted of having contracted ti tonsurans. Keratosis pila is also seen.

FIG. 2. — Photomicrograph: monilethrix. Section of skin from scalp of father of boy aged 5½ years, showing three nodes within the hair follicle.

British Medical Journal

SATURDAY, DECEMBER 3rd, 1932

THE G.P. AND THE CURRICULUM

The curriculum is once again, to use a well-worn phrase, in the melting-pot. Dr. C. M. Wilson's paper in our issue of March 12th, with its provocative title, "The student in irons," was followed by a long correspondence. In the *Lancet*, too, there has recently been a series of signed articles under the heading, "What is wrong with the medical curriculum?" The teaching and licensing bodies are well aware of this feeling of unrest, and the General Medical Council, when it prescribed a readjustment of the curriculum ten years ago, must have foreseen that further and more drastic revision would be needed before very long. Knowledge grows so fast, specialties multiply and subdivide at such a rate, that methods of teaching and of testing the student's knowledge at each stage which were good enough for our fathers or ourselves may be wasteful and even injurious in the circumstances of to-day.

On November 19th (p. 936) we gave an account of the discussion in the Cambridge Senate House on the report of the syndicate on medical courses and examinations at that university. The difficulties debated at Cambridge on October 25th are in some sense peculiar to Cambridge, but several speakers widened their remarks to embrace the problem as a whole. As Sir Walter Fletcher pointed out, revision of the curriculum is a matter which is exciting most of the medical schools in the world—certainly all in Great Britain. "The College of Physicians is now actually proposing that the University, with Oxford and London, and with the Royal College of Surgeons, should join in a combined study of the M.B. degree." All had hoped, he said, that Cambridge in this matter, as often in the past, would lead the way for the rest of the medical world. Three weeks later Dr. Langdon Brown, towards the end of his inaugural address as Regius Professor of Physic, referred to the earnest attempts now being made to overcome the difficulties with which the Cambridge medical student has to contend. He did not doubt that these efforts would be successful, for "Cambridge is always performing the miracle of putting new wine into old bottles."

While the teachers and examiners and research workers are intimately concerned in this pressing problem we must not forget that the most important end-product of medical education is the general practitioner; and when the G.P. has something to say his words should be listened to with respect. We welcome, therefore, a thoughtful paper on medical education in the autumn number of the *Bristol Medico-Chirurgical Journal* by Dr. C. E. S. Flemming, a general practitioner of many years' standing who has pondered long on this subject. He takes as his starting-point the acknowledged fact that with the rapid advance in medicine much more is required of the student nowadays, while our system of training and testing him has not managed to adjust itself to the changes that have taken place. "The newly qualified man of to-day is no doubt more efficient than was his predecessor of forty years ago, but his ability to make use of his knowledge is no better, if as good. . . . If, as is the case in the great majority, proficiency has been attained, has there not been much waste of money that could ill be afforded, and, worse still, waste of time, waste of too much of the best space of life, time spent in useless compulsory lectures, in acquiring unwanted knowledge, in examinations and the preparation for them? . . . One of the serious faults of medical education is the putting an exaggerated value on mere knowledge as apart from reason, the attempt to learn too many facts, to keep pace with new knowledge while failing to give up or to defer the teaching of what is obsolete or not wanted at the moment." Dr. Flemming concurs with Mr. H. S. Souttar—whose address on "The education of the medical student" appeared in our last Educational Number—that a further important defect in the curriculum is the division of study into watertight compartments, the failure to link up one part with another, so that when the student passes out of one compartment into the next he is apt to shut out of his mind what he learnt in the first. Dr. Flemming passes next to a brief but searching criticism of examinations as conducted to-day. His point is that what the medical service of the nation wants first of all and all the time is a due supply of competent practitioners; whereas the schools, under the spell of the examination system, are training their students primarily for examination and incidentally for practice.

Fourteen years ago, in his report on medical education, Sir George Newman drew a word-picture of the ideal candidate for medical practice. Dr. Flemming quotes this and asks pertinently: "Having found the man we want, how are we to improve his education?" To which he as pertinently replies: "Not by adding to the length of the curriculum." What is to be added and what cut out must, in his view, be a task for some independent body to determine. But whatever replacements and adjustments are made, a higher standard for entrance should be required. "We want a command of the English language, so that expression may be given clearly to our thoughts by speech or by writing. There must be some knowledge of the fundamentals; physics, chemistry (inorganic and organic), and biology, not only because of their relation to every branch of medicine, but also in order that the training they bring of scientific methods, exact observation, and logical deduction may be thoroughly inculcated and colour the whole of the student's professional work both before and after qualifying." Each subject must be considered in its proper place and proportion. Many will agree that too much time and attention is given to surgery—not its general principles, which are essential, but its specialized details. Clinical teachers are too apt to demonstrate and lecture on the less common things

and to slur over the things of daily occurrence. "Throughout the curriculum it is necessary to remember that it is a general practitioner that is being made, not a specialist—that specialist study can or should only be made after qualification." In this connexion it will be of interest to turn to the report we publish to-day at page 1012 of a discussion at the Royal Academy of Medicine in Ireland on special subjects in the curriculum, and to the wise summing-up by Professor T. G. Moorhead, the president. Professor Moorhead felt that in the clinical part of the course there was only time to give a man a thorough knowledge of the principles of medicine, surgery, and midwifery. Once those principles were acquired, and once a student was placed in a responsible position, he could acquire further facts with extraordinary rapidity. If, however, as a student he was swamped in detail and failed to acquire a scientific outlook, he could never hope in after life to be a really sound practitioner.

Looking at this matter as a whole, Dr. Flemming throws down a challenge. He says that the training and testing of those who are to be entrusted with the lives and health of the nation has hitherto been determined too much by men who are not in close touch with general practice and aware of its needs. Lastly—and who will disagree here?—no system of medical education can be considered complete without provision for post-graduate study. Dr. Flemming is aware that the curriculum is under discussion to-day in many quarters and from many points of view. He suggests that some disinterested committee should inquire into the whole question and report to the General Medical Council. For this purpose he thinks that the British Medical Association, in contact as it is with all parts of the profession, with its experience and influence, would be the most appropriate body to take the appropriate steps. That other minds are moving in the same direction is shown by the final paragraph of Dr. Rupert Hallam's letter on post-graduate teaching (published last week at page 987), where he suggests that some central body, such as our Association, might well institute inquiries on a large scale, not only into post-graduate requirements but also into the student's curriculum.

DISSEMINATED SCLEROSIS: THE PRESENT POSITION

During recent years disseminated sclerosis has attracted considerable attention, which its social importance fully justifies. There is ample evidence in support of Guillain's assertion that "disseminated sclerosis is, after syphilis, the most frequent disease of the nervous system"; but, whereas neurosyphilis often responds satisfactorily to treatment, the uniformly progressive course and fatal termination of disseminated sclerosis gives it the first place among diseases of the nervous system as a cause of invalidism and death. It must be confessed that, in spite of an increase in our understanding of certain aspects of the disease, no progress has been made towards either the prevention or the cure of a scourge which afflicts with peculiarly distressing symptoms so many individuals in the prime of life.

Disseminated sclerosis, as its name implies, was regarded by the earlier pathologists as essentially an overgrowth of the neuroglia, leading to the development of the characteristic sclerotic plaques. Increasing pathological knowledge, however, has shown that this neuroglial hyperplasia is the reaction of the supporting tissues of the nervous system to a focus of inflammation characterized by destruction of the myelin sheaths of the axones and by inflammatory infiltration. The nature of the histological changes observed during the acute stage of the formation of a plaque has led to the widespread adoption of the view that the disease is infective, because neither in their general features nor in their distribution do these resemble the changes associated with toxic states of the nervous system or with vitamin deficiency. The experimental transmission of disseminated sclerosis to animals has never been authenticated; but this carries little weight as evidence against its infective nature, because it is possible that experimental animals are not susceptible to the disease. Many bacteriologists hold that there is no satisfactory evidence that encephalitis lethargica has ever been transmitted to animals, yet few would deny its infective nature. In 1917 Kuhn and Steiner first suggested that disseminated sclerosis might be caused by a spirochaete, but the evidence in support of this view has not been held sufficient to lead to its general acceptance. During recent years a large number of cases of acute disseminated encephalomyelitis have occurred as a sequel of vaccination against small-pox and of acute infections, especially the exanthemata, and this condition has been characterized by histological changes in the nervous system (especially perivascular demyelination), which present points of resemblance to those of the acute stage of disseminated sclerosis. This has lent support to the theory of the infective nature of the latter, as it can hardly be doubted that acute disseminated encephalomyelitis following vaccination and the exanthemata is in some way related to the preceding infection. Since, however, we are still far from understanding the nature of this relation, the occurrence of this disorder has up to the present thrown no direct light upon the nature of disseminated sclerosis. Nevertheless, it has suggested that disseminated sclerosis may be due to an organism belonging to the group of filterable viruses. A recent claim that such a virus had been obtained from the cerebro-spinal fluid of patients suffering from this disease has been finally exploded by the observations of Dr. Halley Stewart, presented to the Section of Neurology at the Centenary Meeting of the British Medical Association this year and reported in our columns. An increase in our knowledge of the filterable viruses, of the relations of these organisms to their hosts, and of their powers of exciting both immunity and allergy appears to offer the best hope of a greater understanding of the nature of disseminated sclerosis; but progress in this direction, as in other

departments of science, is likely to be made only by pooling facts laboriously acquired by experts in this highly technical branch of bacteriology. Uncritical acceptance of the fantasies of the amateur cannot be too strongly condemned.

We publish in this issue Dr. W. J. Adie's opening contribution to the discussion on disseminated sclerosis in the Section of Neurology—an admirable survey which contains material of importance to the neurologist, the ophthalmologist, and the general practitioner, and which may usefully be read in conjunction with the critical review on disseminated sclerosis recently published by Dr. W. Russell Brain.[1] As Dr. Adie points out, the clinical picture of the disease has been greatly extended during the last thirty years, and the classical triad of symptoms—nystagmus, intention tremor, and scanning speech—is now regarded as characterizing an advanced stage. A multitude of focal symptoms have assumed importance as early, and often transitory, signs of the disorder. Dr. Adie devotes special attention to the relation between acute unilateral retrobulbar neuritis and disseminated sclerosis, a subject which was greatly in need of clarification. Few neurologists will seriously quarrel with his statement that " disseminated sclerosis is the only known cause of acute unilateral retrobulbar neuritis," as he defines it, and that this symptom is often the first manifestation of the disease, and may precede others by many years. A serious responsibility therefore rests upon ophthalmologists and general practitioners, who are more likely than neurologists to see patients at this early stage. Transitory amblyopia in one eye should never be lightly dismissed, but should be regarded as necessitating a complete ophthalmological and neurological examination of the patient ; and the ophthalmologist can no longer rest content with nasal or dental sepsis as a probable cause of acute retrobulbar neuritis.

Dr. Adie's observations and those of other workers have brought to light the long period which may intervene between the occurrence of retrobulbar neuritis and the appearance of other signs of disseminated sclerosis, in some cases exceeding twenty years. It follows that years of freedom from other symptoms do not guarantee a patient who has suffered from retrobulbar neuritis from their subsequent development. As Dr. Adie points out, the recognition of acute unilateral retrobulbar neuritis as invariably a symptom of disseminated sclerosis renders it probable that current estimates of the average duration of this disease are too short. If we understood the nature of the remissions so characteristic of the disorder, we should be near a solution of the problem of treatment, which must aim at aiding Nature to achieve a remission which shall be permanent. Until we can accomplish this the recognition of the true nature of acute retrobulbar neuritis, and of the other early symptoms of disseminated sclerosis to which Dr. Adie draws attention, merely increases the certainty with which we condemn the sufferer to an incurable and ultimately fatal illness.

[1] Brain, W. Russell: *Quart. Journ. Med.*, 1930, xci, 343.

INFANT LIFE PROTECTION

The Children and Young Persons Act, which comes into operation on January 1st, amends and strengthens the law as to infant protection laid down in the Children Act of 1908. The Ministry of Health has issued to maternity and child welfare authorities two memorandums (165 and 165A, M.C.W.), one of them summarizing the provisions of the new Act and the other setting out the law on the subject—for which reference has to be made both to the Act of 1908 and that of 1932—for the guidance of infant protection visitors. Notification must now be made of the reception for reward of children under the age of 9, instead of, as formerly, under the age of 7, and the notification has to be made, save in the case of a child received in an emergency, before instead of after reception. It is also provided that notification of the death or transfer of a child must be made, not only to the local authority, but to the person from whom the child was received ; notification of death has also to be made to the coroner. The power of the authority to limit the number of children in a foster home has been extended, as also the power to secure the removal of children kept on unsuitable premises or by unsuitable persons ; unsuitable persons include those unfit to have care of such children by reason of old age, infirmity, or ill-health, as well as ignorance, inebriety, immorality, or criminal conduct. Detrimental environment is recognized as well as unsuitable premises or foster parents as a ground for action either before or after reception. The exemptions to be granted to hospitals, convalescent homes, and institutions have been more closely defined in the new Act. Every maternity and child welfare authority has to provide for the administration of the Act in its area, and whenever children are kept for reward the authority must appoint one or two health protection visitors who have to satisfy themselves as to the health and well-being of the children and give any necessary advice or direction. The wider terms " health and well-being " have replaced the narrower ones " nursing and maintenance " in the Act of 1908. Other provisions in the Act relate to delinquent children, and the substitution of what are known as residential schools for the old industrial reformatories. The Council of the British Medical Association at its last meeting requested one of its members, Dr. R. G. Gordon, to draw up a memorandum concerning the points to which the Association could usefully direct attention with a view to securing good administration of this new " children's charter " so far as its medical aspects are concerned.

BLAMING THE DOCTOR

Bernard Shaw once said that every general practitioner should have this legend written on his door-plate: " Remember that I too am mortal." Though not a doctor himself, Mr. Shaw has always shown a ready appreciation of the doctor's dilemmas. More than any other professional body we are inclined not to protest when we are criticized. Perhaps it is because the doctor has not so much spare time as his critics. Perhaps it is because he knows that his critics will give the lie to their words when they run to him for help in illness. Perhaps, even, a certain false pride makes him shrink from inviting the old sneer, *Qui s'excuse, s'accuse.*

Some accusations are too irresponsible to warrant refutation, but articles have appeared lately, in more or less responsible quarters, which impute to the profession a *laissez-faire* attitude towards health (with a capital H) and towards their patients. The old story about vested interest in ill-health has once more been trumped up. Because practising members of our profession receive fees for treating sick people, therefore, we are told, they like people to be ill. One critic writes with pathetic emphasis, "WE ARE NOT WELL," and blames the doctor for it. Unfortunately, there are quacks in every profession—even in that of journalism—who do exploit people's natural fears. But quack they never so loudly, they are not the voice of their profession. It is as well to point out to lay commentators that disease came first and the doctor afterwards. From the way some people talk and write one would imagine that doctors had invented disease in order to foist it on to a gullible public. The medical profession exists to combat disease, because disease exists. As a result of centuries of patient, but too often interrupted, study of disease we are now beginning to know something about its nature. The control of such diseases as typhoid and diphtheria is eloquent witness to our concern for a healthy population. We are now beginning to know something about health, but our knowledge has had to come largely through a study of disease. Deficiency diseases and disorders of the endocrine glands we now know are due to the absence of substances necessary to health. It is absurd to say that the medical profession withholds these substances in order to keep the population unhealthy. Yet this is the kind of inference that some minor publicists try to draw. The fact is that man in modern civilization lives in such a way as to put a great strain on the good health he is commonly born with. He cannot escape the noise, the hurry, the smoke of the modern city, or the exhaust gases of the internal combustion engine. But he can avoid eating and drinking too much, smoking too much, sleeping too little, and exercising himself too little. The medical profession cannot make and enforce sumptuary laws, but individually and collectively it is for ever telling the public that simple living would give health to many who complain they are not healthy. And if they persist in unwise courses and have to pay the penalty, "Why blame the doctor?" As Sir Farquhar Buzzard said in his Maudsley Lecture (which we report at page 1027) the layman's ignorance of medicine is profound, as profound as his ignorance of the method of science. This ignorance seems to be shared by journalists who choose the medical profession as a target for "snappy" articles.

VITAMIN CONTENT OF BUTTERS

Dr. S. S. Zilva and his assistants, working at the Lister Institute, have just published the results of some interesting researches upon the vitamin content of New Zealand, Australian, and English butters. This work was part of a scheme of investigation, organized by the Medical Research Council, into the vitamin content of various foodstuffs, and is issued as No. 175 of the Council's Special Report Series.[1] Butter is an important source of the fat-soluble vitamins A and D, and, since last year butter from the Southern Dominions constituted 44 per cent. of our total imports of butter, it is a matter of much practical importance to know whether its vitamin content is affected by transport and cold storage. The authors have estimated the vitamin A and D contents of a large range of samples by means of the usual biological tests. They find that Australian and New Zealand butters, when they reach the consumer in this country, have a vitamin A and vitamin D content as high as that of butters produced in Great Britain and elsewhere in Europe. Other investigators have found that there is a considerable fall in the vitamin content of British butter during the winter, when the cows are stall-fed, but the vitamin content of Australian butter has been found to show little decline at this time of year. Finally, it has been shown that the vitamin content of butter is but little affected by cold storage. There is no appreciable loss of potency during the weeks of transit by sea, and in several cases no notable loss can be detected even after periods of cold storage up to two years. The vitamin content has been found not to be affected by the racial origin of the herds from which it comes.

[1] Vitamin Content of Australian, New Zealand, and English Butters. By M. E. F. Crawford, E. O. V. Perry, and S. S. Zilva. London: H.M. Stationery Office. 1932. (1s. net.)

RADIUM FROM CANADA

The possibility of large radium supplies from Canada in the near future was brought forward by Major Bernhard Day in a lecture delivered last week before the Institution of Mining and Metallurgy in London. Major Day has taken part in some extensive prospecting on the shores of Great Bear Lake, about 1,100 miles north of Edmonton, the capital of Alberta. The discovery of pitchblende in this area was made in 1930, when a well-known mining man in Canada, Mr. La Bine—one of the cobalt pioneers—flying with a companion in the North Western Territories, on the east side of the Great Bear Lake, noticed peculiar geological formation. He landed and followed the shore line, making ten miles a day. On the fourth day his companion became blinded by snow glare. A suitable camp site was found, and, after putting tea-leaf compresses on his companion's eyes, La Bine went out to have a look round. Within a quarter of a mile from camp he found uranium-stained manganese ore with infiltrations of the more compact and duller blackness of pitchblende. A few days' work disclosed the magnitude of the discovery, and increasingly rich pitchblende ore was found a few feet below the surface: the veins were traced for many hundreds of feet. Up to now development has begun on four distinct pitchblende-silver workings, and some forty tons of high-grade, hand-sorted pitchblende-silver ore have been shipped from the locality by aeroplane or boat. The pitchblende content of this ore is expected to produce 5 grams of radium. One kidney-like lense, 30 inches wide and about 6 feet in length, produced $6\frac{1}{2}$ tons of pitchblende ore, averaging 72 per cent. uranium oxide, yielding nearly one and a half grams of radium. A good deal of work has been done by the Department of Mines at Ottawa on the first batch of pitchblende sent down from the arctic north. A plant has been constructed at Port Hope, some sixty miles north of Toronto, on Lake Ontario, with Dr. Pochon, for some

years assistant to Mme Curie, in charge, and it is expected that this plant will have produced its first gram of radium by the end of February next. Owing to the absence of impurities, such as vanadium and thorium, the treatment is said to be cheaper and faster than the treatment of Katanga ores, which are controlled by Belgian interests, and it is believed that the general grade will be higher than that of the Congo deposits. Certain plans are being made for marketing, and Canadian mining men are confident that the discovery can be profitably developed, and that the monopoly so long enjoyed by Belgian interests will soon be at an end.

INDUSTRY'S DEBT TO SCIENCE

The Norman Lockyer Lecture of the British Science Guild was given last week by Sir Frank Smith, F.R.S., secretary of the Department of Scientific and Industrial Research. His subject was "Industrial research and the nation's balance sheet." After considering industrial science as a whole the lecturer discussed in some detail the relation of the nation's balance sheet to four major items with which he was closely concerned: manufactured goods, the largest item in our import list; food, our chief import; coal, our greatest natural asset; buildings, our greatest material asset. The research work of the Food Investigation Board of his department had been successful in showing how waste in the transport and storage of all kinds of foodstuffs, meat, fish, and fruit could be reduced and quality improved. It was estimated, for example, that recent developments in cold storage and gas storage of home-grown apples, in all of which the experience and advice of the Board were freely drawn upon, had increased the growers' returns by £100,000 per annum. Sir Frank Smith attributed the rapid advance of the electrical industry to the fact that those who controlled its technical side had necessarily to be men of the highest scientific attainments. "They know that their industry was born of science, lives with science, and without science would perish. Although the entity with which they deal cannot be seen, I believe more knowledge is available of the nature of this invisible entity than is available of the nature of many of the material things seen, handled, and sold in other industries. If only a big research effort to determine the nature of coal had been made fifty years ago the industry would not have been in the troublous straits it is to-day." There was no product of any kind which could not be improved in quality and produced more cheaply by properly conducted research. If a country had to choose between new knowledge and gold with which to fill its vaults the wise choice would undoubtedly be new knowledge, for with it the gold could be obtained, whereas without it the gold would be lost. Speaking of industry's debt to pure science, he recalled that at the British Empire Exhibition at Wembley in 1925 the Royal Society arranged some experimental exhibits illustrating radiation. For a full illustration of the industrial applications the whole of Wembley would have been needed. A few of the items, however, that could have been shown were wireless valves employing knowledge of electrons, broadcasting transmitters and receivers, *x*-ray analytical apparatus for metals, radiological equipment for medical purposes, radiographs for foot-wear and the detection of faked pictures, ultra-violet lamps, photo-electric cells, gas-filled electric lamps, neon tubes, and many types of luminous vapour tubes, infra-red photography, and a whole range of applications depending on sunlight. A hundred years ago there was no such thing as organized research. Progress was made either by the isolated research activities of exceptionally gifted men or through unrelated and accidental observations. In the nineteenth century scientific men at the universities were occasionally asked to solve the problems of industry, but it was not until the growth of the new electrical, chemical, and metallurgical industries that the large industrial research laboratories of the world were started. "These laboratories," said Sir Frank Smith, "aim at preventing industrial waste, at the standardization of processes of manufacture and of the products, at lessening the costs of production, and at the production of new types of goods. Their work does not replace the pure research work carried out at the universities; it is supplementary to it. The outstanding characteristic of pure research is that it aims at increasing knowledge irrespective of application, and it cannot be organized in the same way as industrial research. As Sir Joseph J. Thomson has said, 'Great ideas in science are as wayward as the fancies of a poet, and they cannot be controlled and organized.'"

MEDICAL HISTORY OF ALEXANDER THE GREAT

No biography can be regarded as complete unless some account is taken of heredity, constitutional disposition, and disease as factors influencing a man's activities. It is remarkable that in the case of no less a celebrity than Alexander the Great very few attempts—and those, moreover, severely criticized by archaeologists—have been made to estimate the influence of these factors. The omission has now been remedied by Professor Bertolotti in his exhaustive study of Alexander the Great, regarded in the light of modern medical criticism.[1] In this work an attempt is made, with the aid of the fragmentary accounts of ancient authors and the study of statues, basso-relievos, coins, and mosaics, to reconstruct the physical life of Alexander, define his morphological type, and ascertain the effects of the numerous wounds sustained in his campaigns. The early years of Alexander, his social and political surroundings, and the character of his parents, are passed in review, together with the illnesses to which he was subjected in childhood, one of which—namely, adenoids—left permanent marks on his features. An attempt is next made to depict his physical characteristics and to define his ethnological type; and in this connexion it is interesting that study of the statuary has revealed the existence of a slight right-sided facial hemiatrophy. With regard to disposition, Alexander is considered to have been somewhat erratic and excitable; the author attributes this to hyperthyroidism, and is supported by the enlargement in the thyroid region and the prominent eyes depicted in an ancient mosaic, a reproduction of which is given in the book. Alexander received six wounds and three contusions in battle. These are minutely described, together with the circumstances attending their infliction and the consequences following from them. The most serious

[1] *Alessandro Magno: La Critica Medica Nella Storia.* By Mario Bertolotti. Torino: Fratelli Bocca. 1932. (56 lire.)

of these was a penetrating wound in the left side of the chest, from an arrow ; this led to empyema and a persistent sinus, but did not involve a permanent withdrawal from the field of battle. What appeared at first to be a still more serious injury was a blow on the back of the head by a piece of rock, followed by temporary unconsciousness and loss of sight. During the difficult retreat from India Alexander had an attack of dysentery, and by the time he reached Babylon he had considerably deteriorated in health. Here he received the alarming intelligence from the magicians that the omens were inauspicious for him, the liver of the sacrificial sheep having exhibited an absence of the gall-bladder—an indication of the gravest import. Shortly after this untoward event Alexander's temperature rose, and in the course of a few days hyperpyrexia terminated in death.

INTERNATIONAL CONTROL OF TRAFFIC IN DANGEROUS DRUGS

It will be remembered that the international control of the traffic in opium, morphine, heroin, and cocaine, etc., is regulated by the Hague Opium Convention of 1912 and the Geneva Convention of 1925, and that in 1931 a further Convention was signed at Geneva for the limitation of the production of the narcotic drugs therein specified to medical and scientific requirements. The Advisory Committee on Opium and other Dangerous Drugs reported in October to the Assembly of the League of Nations through the Fifth Committee of that body. Concern was expressed that not more than six States had so far ratified or acceded to the Limitation Convention of 1931, to the effectuation of which the Advisory Committee attaches the greatest importance. Special requests are accordingly to be addressed to those countries which have failed to ratify, in order that the new Convention may come into force, as was contemplated, on July 13th, 1933. The Permanent Central Opium Board of the League, in its report for 1931, gives reasons for believing that the world production of morphine, heroin, and cocaine has decreased since 1929. This gratifying statement is, to some extent, qualified by the fact that no reports had been received from Turkey or Soviet Russia, the former, at any rate, being a large producer of some of the drugs in question. The seizures of contraband narcotics reported also showed a decrease, except in the case of raw opium , these latter amounted in 1931 to 10,166 kilograms against 1,270 in 1930. The Board truly adds that "the absence of seizures does not necessarily show an absence of illicit traffic." It is good to know that preparations are on foot for a further conference with a view to limiting the cultivation of the opium poppy and the coca leaf to the amounts required for medical and scientific purposes.

Sir James Crichton-Browne celebrated his ninety-second birthday on November 29th. On behalf of his fellow members of the British Medical Association, which he joined in 1866, we offer him congratulations.

Professor Davidson Black, F.R.S., will deliver the Croonian Lecture before the Royal Society on Thursday, December 8th.

ANNUAL MEETING IN DUBLIN, JULY, 1933

The success of the Centenary Meeting of the British Medical Association in London in 1932 renders difficult the organization of the next ordinary Annual Meeting. To the Leinster Branch has fallen this task, and those responsible are determined to prove to the members of the Association that a successful and enjoyable meeting can be held in Dublin. To follow London would, under normal circumstances, be in itself a severe handicap, but when to this are added the world-wide depression with its financial stringency and the present political situation the difficulties can easily be understood. Anxiety on this latter score should not be unnecessarily magnified, especially by those who view conditions from a distance. Whatever may be the opinions of doctors as citizens of one country or the other, neither their loyalty to their country nor their adherence to a party will be endangered by their acting as hosts or as guests at the Association's Dublin Meeting in July, 1933. The Leinster Branch has invited the Association to visit Dublin, and sincerely hopes that this invitation will be widely accepted. At the Dublin Meeting medical science can once again demonstrate that it erects no barriers to free interchange of ideas ; and, when more serious work is finished, it is unlikely that sport, dining, dancing, or sightseeing will give rise to any controversy. The local officers and committees are making all the arrangements necessary for the success of the next Annual Meeting, and they feel confident that it will be a success if members living outside the area of the Leinster Branch will do their share and attend.

The journey to Dublin is neither difficult nor tiring. One can breakfast in London and dine the same evening in Dublin, or dine in London and breakfast next morning in Dublin. The sea journey from Holyhead occupies less than three hours, and the boats, whether on this or other routes, will be a revelation to travellers accustomed only to those which cross the narrower but more unruly channel which separates France from England. Once in Dublin the visitor may be certain that he will find himself at least as safe and well protected as at home.

Dublin possesses many features which render it particularly suitable as a meeting place. It is an ancient city, with much to interest the historian ; its two picture galleries will enchant the picture lover, its museum will attract the antiquarian, its zoological and botanical gardens will appeal to the naturalist, and its twenty-two golf links within a radius of fifteen miles should satisfy the golfer, while few can fail to enjoy the beautiful scenery which surrounds the city.

Preliminary Arrangements

Arrangements for the Meeting in Dublin commenced long before the Centenary Meeting, and are now well advanced. The headquarters will be in the Mansion House, kindly lent by the Lord Mayor and Corporation of Dublin. Here, convenient to the centre of the city, the chief hotels, and the sectional meetings, the Exhibition will be housed, and members will register and be supplied with tickets for the various entertainments and excursions ; here also they can rest in comfort or read or write.

As is usual the first event will be the Annual Representative Meeting, which will commence on Friday, July 21st, at 9.30 a.m., in the premises of the Royal Dublin Society. This Society, which is well known as the body responsible for the celebrated Dublin Horse Show, is interested not merely in horses but also in music, art, literature, science, and industry. It possesses one of

the finest lecture halls in the British Isles, which it has generously granted for the use of the Association. When the members of the Representative Body see this spacious and beautiful hall, and, more important still, judge for themselves its excellent acoustic properties, they will realize the extent of the gratitude of the local organizers to the Society. They will be able to obtain luncheon and tea on the premises, and they will find a comfortable lounge available; they can, if they will, inspect the grounds where, a fortnight later, the Horse Show will be held. The Representative Body will be occupied practically all day on Friday, Saturday, and Monday, July 21st, 22nd, and 24th, and on Monday at 9 a.m. the Council will meet, also in the premises of the Royal Dublin Society, in what is probably the most beautiful and interesting Chamber in which the Association's Council has ever met.

Tuesday, July 25th, will be a busy day. At 9 a.m. two religious services will be held at which members will wear their robes, and immediately after the services the Exhibition in the Mansion House will be opened by the President-Elect. Before lunch the Annual Business Meeting will be held at the Royal Dublin Society, and there also, at 4.30, the adjourned Annual Meeting, at which delegates will be received and the President will deliver his address.

The mornings of Wednesday, Thursday, and Friday (July 26th to 28th) will be occupied with the meetings of the Scientific Sections; the officers of sixteen Sections have been appointed by the Council, and their names will shortly be announced in these columns. It was not found possible to accommodate all the Sections in one place; they will be divided between the Medical School of Trinity College (Dublin University) and University College (National University). The two colleges are less than a mile apart—the Mansion House lying approximately midway between them—and the inconvenience of this separation of Sections will be more than counterbalanced by the fact that Sections will meet in proper lecture theatres, the majority of which are supplied with lanterns and epidiascopes. The Museum, which will be open from Tuesday to Friday (July 25th to 28th), will be situated in the Anatomy School, Trinity College.

So much for the more serious part of the Meeting. Entertainment, however, has not been neglected. The Representatives' Dinner will be held on Friday, July 21st, and on the evening of the following day an entertainment for the Representatives and their wives will be given in the Royal College of Physicians. An excursion to County Wicklow, with lunch at Glendalough and tea at Greystones, is being arranged for Sunday, July 23rd. On Monday there will be a special performance in the Abbey Theatre, and the evening of Tuesday will be devoted to the President's Reception. A garden party will be held in the Zoological Gardens on Wednesday afternoon, and the same evening the Government will entertain the visitors at a reception in Dublin Castle. On Thursday afternoon honorary degrees of Dublin University will be conferred on some distinguished visitors, and subsequently there will be a garden party in the College grounds. The Association's Annual Dinner will also be held on Thursday. Numerous attractions have been arranged for Friday: an At Home at the Rotunda Hospital, visits to Guinness's Brewery and other industries, and to some special hospitals. After the Popular Lecture on Friday evening, University College will entertain the members and ladies at a Reception. Arrangements are being made for excursions on Saturday, July 29th, and it is hoped that many of the visitors will take the opportunity of seeing something of the rest of Ireland.

During the course of the Annual Meeting the usual golf competitions will be held. As the Ulster Cup has been won outright, the President-Elect is presenting another cup of similar design to be called the Leinster Cup; this will be competed for on similar conditions to the Ulster Cup.

The ladies accompanying members appear so far to have been neglected; actually this is far from being the case. Through the generosity of Lord and Lady Iveagh, their house in St. Stephen's Green, quite close to the Mansion House, is being utilized as the Ladies' Club. From this as headquarters many activities will attract lady visitors. Full details will come later, but the arrangements will include at homes and receptions, golf and tennis, excursions and sight-seeing trips, shopping, and a race meeting, while the essential tea and bridge will not be forgotten.

At the present stage this outline must suffice. It will show the desire of the Leinster Branch and of the citizens of Dublin to make the Dublin Meeting a memorable one, both scientifically and socially.

THE INSTRUCTION OF THE LAYMAN

SIR FARQUHAR BUZZARD'S MAUDSLEY LECTURE

The thirteenth Maudsley Lecture was delivered before the Royal Medico-Psychological Association on November 22nd, with Dr. R. B. CAMPBELL, president of the association, in the chair. The lecturer was Sir E. Farquhar Buzzard, whose subject was announced as "Education in medicine."

Sir FARQUHAR BUZZARD began by saying that the problem of educating laymen in matters of health and disease to an extent which would create closer co-operation between doctor and patient was one which had attracted considerable attention in recent years, but the difficulties of which demanded more careful exposure than they had yet received. The problem was not only bristling with difficulties and possibly fraught with dangers, but could not be tackled with success unless some subsidiary questions were investigated. The first of these might be put in the following way: What was the nature and extent of the average layman's ignorance of the science and art of medicine—using that term in its widest sense—and on what factor did it depend? The lecturer explained that he used the term "layman" to describe the man in the street, with little or no scientific education, who had not been brought into association with the profession of medicine, and he used the term "ignorance" in the strict sense, without any offensive or critical implications.

LAY IGNORANCE OF MEDICAL SCIENCE

With these definitions in mind, the layman's ignorance of medicine could only be described as profound. Such ignorance would perhaps be of little moment if it were as fully and readily accepted and admitted as a similar ignorance on the part of the layman with regard to other branches of special knowledge. Advice with regard to the law, or engineering, or architecture, or even theology, was not expected from persons who had not been trained in those subjects, but in the case of medicine an entirely different attitude was encountered. A profound ignorance of medicine was almost universal, but with it went an equally profound belief that the lack of knowledge was of no material consequence, and that such lack was more than compensated by common sense, that rare and precious gift of which everyone secretly supposed he had abundance.

In these days, when nothing of the old-fashioned reticence on matters of health survived, ignorance had no lack of opportunities for its display. For example, the

curiosity of the layman was easily satisfied by a name, even if it conveyed nothing to the mind of the individual who used it or to that of his audience. On every side one heard to-day the remark, "I have got blood pressure," stated with so much satisfaction and finality that one was apt to forget that without such a natural and necessary concomitant of life the speaker would not be in a position to provide the information. The lay mind clung to the mediaeval idea that there were so many distinct morbid entities, each of which had its appropriate cure if the doctor was clever enough to recognize the former by name and prescribe the latter correctly. Hardly a day passed without the layman reading in a newspaper the views of a journalist as ignorant as himself on some medical topic, expressed with that sublime assurance which was so easily accepted as the proxy of knowledge.

The Cult of Osteopathy

It was little wonder (Sir Farquhar Buzzard continued) that the ignorance of the qualified as compared with the enlightened wisdom of the unqualified practitioner was a theme which never failed to stimulate a lively newspaper correspondence or drawing-room discussion. In addition to ignorance of all scientific principles, such enthusiastic devotion to quackery of all sorts indicated the wide prevalence of an infantile type of critical faculty, so undeveloped that any statement, spoken or written, was accepted without question and without regard to its authority. One was often asked to account for the success of an unqualified practitioner most in fashion at the moment—a question not easy to answer without a general review of its implications, but one quite worthy of consideration. Let it be supposed that this unqualified practitioner practised osteopathy, the most fashionable cult of recent years, though one which, he thought, had seen its best days and would be forgotten in ten years' time. The osteopath was just the bone-setter of a previous generation, fortified by a smattering of anatomical knowledge, and glorified by the very simple and ingenious theory that all diseases were the result of displaced bones pressing on organs or vessels. The osteopath would find, no doubt, a displaced bone. One must accept the displacement as an act of faith, because it would not be appreciable to less skilled hands or revealed by the most expert *x*-ray examination. The treatment was a course of manipulation directed to restore the bone to its position; the treatment would cost so many guineas, preferably paid in advance. At the end of the course the patient was well, or better than before, or in the same state, or worse. If he was well, the pain having disappeared, it was accepted that he had been cured. The possibility that he had recovered naturally during treatment, or perhaps in spite of treatment, was a proposition deemed unworthy of a moment's thought. If he was better, though not cured, his reactions were somewhat similar. If there had been no change in his condition, or his condition was worse, the patient had a feeling of slight shame at having been so easily duped, and resolved to say nothing about it to his friends. The net result to the osteopath could be estimated. If only one patient in ten recovered, his fame and fortune were as good as made, for a time at any rate. Compare with this the qualified practitioner. If he succeeded, it was only his job, and there was no need for the patient to make a fuss about it. If he failed, there was little chance that the patient's friends would not hear of his lack of success.

The majority of human ailments disappeared in response to Nature's recuperative efforts, often reinforced by a sublime faith in any form of treatment. One was asked how to account for the case of Mr. B., who was given up by all the doctors and went to Mr. A., an osteopath, who cured him at once. The following story, for the truth of which he could vouch, might supply an answer.

Mr. C., a first-class exponent of cricket and football, was approaching the age when, according to his relatives, his energies would be better spent in less strenuous sports. He had suffered occasionally from a loose cartilage in one knee, and decided to consult a surgeon, who told him that although an operation would undoubtedly get rid of the trouble the disability was of so infrequent occurrence as hardly to justify drastic measures. "At any rate," the surgeon added, "think it over, and let me know what decision you come to." Within a few days this cricketer made a century for his county, without any ill effects, but his cricketing friends, hearing of his previous trouble, persuaded him to seek the help of Mr. D., the most fashionable bone-setter of the day. Acting on his advice, he had his knee manipulated under an anaesthetic, and paid a fee of thirty guineas. Within a day or two a paragraph appeared in the newspapers informing the world that Mr. C., having been given up by a distinguished surgeon as incurable, had been operated on by Mr. D., with such instantaneous success that he had made a hundred runs for his county. Mr. C. at once wrote to the paper pointing out that his century was made before the operation and not after it, but his letter was returned with the intimation that the advertisement and the correspondence columns had nothing to do with each other! He continued to suffer from his knee at intervals.

Must Medical Science be Disowned?

It was impossible either to accept or refute each and every story of osteopathic cure, because the data on which they were built could never be verified. But the question might be looked at in a broader way. If there was truth in the plea that all disease was the result of displaced bone, and all cures were consequent upon its replacement, then the whole science of pathology, which had been laboriously evolved since Morgagni, was fundamentally erroneous and false beyond repair. If there was one word of truth in the osteopathic theory every centre of medical teaching and research should be cleared of its physicians and surgeons, pathologists, anatomists, and physiologists without delay. These, it was true, had not yet succeeded in disclosing the origin or cause of all morbid processes. They made no claim to the cure of any of them. But in the last fifty years they had accumulated an enormous mass of facts, carefully observed and controlled, which were entirely incompatible with the theory of osteopathy. "But," said the layman, "there must be something in it." He could not understand it. In this matter, however, there was no middle course. Either the pathology taught in this and every country was based on sound premisses and worthy of prosecution to its logical conclusion, or every medical scientist must be disowned, and what had been achieved must be thrown away. The acceptance of one or other of these alternatives might be safely left to the public, in spite of its leaning to heterodoxy, its search for treatment rather than diagnosis, and its love of a panacea.

Osteopathy owed some of its popularity to the simple theory by which it was exploited. The layman knew little or nothing about organs, but he knew something necessarily from everyday experience about bones and muscles and general anatomy, so that he found himself on easy terms of educational equality with his adviser. The ready diagnosis and the glib explanation playing on his profound ignorance could not fail to make an unanswerable appeal to his "common sense."

From the time of Harvey to the present day the practice of medicine had steadily progressed in efficiency, partly by reason of accumulated observations and experience, and partly owing to the rapid development of the ancillary sciences which had come to its aid, particularly during the last hundred years. It would be many years

before it reached the status of an exact science, but every decade which passed saw a substantial increment in its scientific equipment and a clearer scientific outlook. The records of quackery had made no lasting contribution.

QUACKERY AND THE CREDULITY OF THE LAYMAN

Sir Farquhar Buzzard went on to say that he had been influenced to make these observations because quackery flourished in direct proportion to the credulity of the layman. It was therefore an important factor in creating that atmosphere of misunderstanding and distrust pervading the practice of medicine which it was his purpose to investigate. Unfortunately, the subject of quackery could not be dismissed without some reference to the professional counterpart which added materially to the confusion of the public mind. One saw the profession following like a flock of sheep one new cure or stunt after another. Sour milk, hormones, innumerable forms of electricity and rays, vaccines, and various pleasing nostrums, to say nothing of liver, had one and all been exploited with so little discrimination that the public must be forgiven if it failed to distinguish between the methods adopted by qualified and unqualified practitioners. With still more reluctance he must confess that there were registered practitioners with seductive addresses not far from Oxford Street who were not above adding the "Abrams box" or the artifices of an osteopath to their diagnostic and therapeutic armament. It was only fair that the profession's contribution to the difficulties of the problem should be admitted.

In order to obtain a true perspective of the gap which separated the layman's ignorance from the doctor's knowledge of the factors in health and disease, it was necessary to recall what was encompassed in the comprehensive title, "medical curriculum." The medical practitioner had spent six or seven years in fitting himself for his future responsibilities. This had been a period of probation, sustained effort, and repeated struggles with examiners. He studied chemistry, physics, and biology as a necessary approach to the problems of biophysics, biochemistry, and pharmacology, and not until after four years did he come into contact with the living patient. It was not only the load of information which he had ingested—and perhaps imperfectly digested—which constituted the essential difference between his education and that of the layman who was to be his patient. During the whole of those seven years he had been trained in precise methods of investigation, he had been trained to express his thoughts in exact language, to distinguish between facts and theory, to regard *a priori* conceptions with suspicion, and to appreciate the value of controlled experiment. He had developed a critical faculty and a scientific outlook. It was not surprising that with this background the newly fledged practitioner discovered that the discussion with his patient on matters of health and disease was one of the most difficult and exacting tasks with which he was confronted.

POPULAR LECTURES: THEIR POSSIBLE HARM

The assumption was made in some quarters that the layman's ignorance could be cured by a course of lectures purporting to put the problems of medicine into popular language: an attractive proposition at first sight, no doubt. But in the training of the doctor it was accepted without question that something like four years was spent in acquiring knowledge in chemistry, physics, biology, anatomy, and physiology, without which an intelligent grasp of the functions of organic life was impossible. It was held, and properly, that the student was unfitted to tackle the problems presented by diseased tissue and perverted function until he had become thoroughly acquainted with healthy tissues and normal function. Was it wise to skip over those four years and to bring the layman, totally unprepared, face to face with the problem of health and disease, through lectures, the Press, or the wireless? It must not be supposed for a moment that he would throw cold water on attempts to enlighten the public mind in regard to the broad principles of hygiene and preventive medicine, the elementary facts of heredity, or even the more straightforward aspects of eugenics. But what was to be said about lectures on cancer, on maternal mortality, or on the dangers of middle age? Only a few days previously he had listened to a stimulating address by Dr. Robert Hutchison on "Hypochondriasis, individual, vicarious, and national." Dr. Hutchison had confessed anxiety with regard to the popularization of medicine. Medical men knew, and the layman could not know, that superficial snatches of medical learning were already a powerful and prevalent factor in promoting mental ill-health throughout the community, and the increased dissemination of such dangerous germs could not be contemplated without uttering a note of warning.

THE REORGANIZATION OF GENERAL EDUCATION

It was possible to regard the widespread "health consciousness" with genuine alarm. So clearly did he realize the psychological danger of any attempt to scatter seeds of knowledge on unprepared soil that he hesitated to accept the popularization of medicine as a solution of the problem. But if a sufficient gloss of medical knowledge without scientific background was dangerous to the community, was it possible that more cultivation of the background and less attention to the gloss might lead to better results? If general education were reorganized in such a way that every student was required to make some elementary acquaintance with scientific lines of thought, even at the expense of time spent on ordinary subjects, many problems would be brought nearer to solution. It was acknowledged, and in some quarters deeply deplored, that civilized life had been revolutionized by the progress of science. Equally accepted was the belief that no single individual could hope to keep pace with that progress in all its branching by-paths; but there were fundamental principles and laws inherent in all scientific advances of which the layman was lamentably ignorant, and the knowledge of which might make all the difference to his outlook. A desire for the inclusion of biology—the science of life—in general education, was being voiced at present and had his sincere sympathy, chiefly in the hope that that subject might be regarded as a channel whereby students would be able to obtain an insight into scientific research and methods, rather than as a vehicle for the ascertainment of certain facts. It might be objected to by the pedagogue on the ground that it would be inimical to what was called culture. But if it was agreed that they were living in a scientific epoch and the achievements of science were still in their infancy, was it not reasonable to believe that culture in the future would be beyond the reach of anyone unacquainted with the rudiments of science? Just as surely as general education would actually become more scientific in response to the demands of the age, so would culture change its complexion in conformity with changing values.

In conclusion, Sir Farquhar Buzzard suggested that a Royal Commission investigating the same problem would arrive at no other conclusions than those he had set out in his lecture, and that its report would have as little effect in expediting the necessary reforms as the discourse to which his audience had given so much patient attention.

THE BRITISH HEALTH RESORTS ASSOCIATION

INAUGURAL MEETING

An inaugural luncheon of the British Health Resorts Association was held at the Ritz Hotel, London, on November 22nd, with Lord MESTON in the chair. A message wishing the venture every success was read from the Duke of Connaught, and the Minister of Health (Sir Hilton Young) attended to give it his blessing.

Lord MESTON described the association as a venture of faith in the common sense of the British people. He said that no hostility to foreigners was intended, nor any antagonism to existing travel associations. He added that the association had been fortunate in securing as its secretary Dr. Alfred Cox, who had lately retired from the Medical Secretaryship of the British Medical Association.

Sir HILTON YOUNG, in proposing the toast of "The New Association," wished it, on behalf of his Department, every prosperity and success. The association drew its membership largely from the medical profession, and had for its object the promotion of the interests of British health resorts. As he understood it, there were two principal methods by which this could be achieved, and two publics to which the association could look. The first was the appeal to the general uninstructed public, among whom it was necessary to make known the services that could be rendered by British health resorts. The public used not to need this information; a hundred years ago the British spas were better known than they are to-day. The other task was to stimulate the local authorities, the medical profession, the hotel proprietors, and all others interested in particular resorts to make the best use of what must be described as a national asset, in the past a somewhat neglected one. It was necessary to bring home to the public that there was nothing magical in the atmosphere of Continental watering places as compared with those in this country, and that there was every resource available for their health and well-being in the homeland. The work of the association had a distinct application in the sphere of improvement of the public health, and he was very glad to learn that Dr. Cox, who was so well known to the Ministry by his years of service for the British Medical Association, had placed his knowledge and ability at the disposal of the new body, which was an assurance that it would be directed in a wise and experienced manner.

Sir THOMAS HORDER, in responding to the toast, brought a message from the Prime Minister, wishing every success to the association, and he went on to make a reassuring statement about the Prime Minister's health. Mr. MacDonald had been his guest in Hampshire for the week-end, and as he accompanied him to his meeting in Portsmouth, the mayor invited him to occupy a seat on the platform. Sir Thomas added that only that morning his attention had been drawn to a newspaper headline in inverted commas, as though it might be a quotation from someone: "The Premier must rest or break down." He was prepared to say that the Prime Minister's health was excellent. Of necessity he was at times a tired man, and even a strained man, but he was physically and mentally fit. Continuing, Sir Thomas Horder said that his present business was to assure the Minister of Health and the other guests of the association that the new organization had the backing of his colleagues in the medical profession. This was a national movement. A great amount of money was spent by British people seeking health abroad; how much of that money should remain at home he was not prepared to say, but he could say that a great many patients who went abroad for purposes of health could obtain the same results in Great Britain. The main object of the new association—certainly of the medical interests which it represented—was to make possible exact knowledge as to what British health resorts could provide. A certain fetish existed in the minds of a good many British people with regard to Continental health resorts. Doctors were very familiar in their consulting rooms with what the Minister of Health had called "the magic of the Continent," and some patients, no doubt, received a great stimulus in their treatment from the mere fact of going abroad. The further they went the better they felt, and the ruder the conditions the more convinced they were that they were receiving good. To wallow in the mud under the snows of the Carpathians was supposed to have a therapeutic effect which the peat of the Yorkshire moors would never supply. These things had a psychological value, and he did not think the association could influence largely the kind of mentality to which he referred, at least not in the first advance, though that might be possible later. But there were a large number of patients who did require to know what could be provided for them in this country, and at present the information on the scientific side was not sufficiently exact or widespread. Therefore he thought the new association would fill a very useful role.

Lieut.-Colonel R. H. ELLIOT said that the original aims of the movement were modest, as its first title, "The Wintering in England Movement," showed. They had thought only of the south coast, but offers of help and reproaches at non-inclusion came from many other areas. Conferences had been held at various coastal towns and at one spa, and it was reported that the results had been most satisfactory to the localities concerned. All the coasts of the British Isles, the spas, and the mountains and moorlands should have the help of the association if they wanted it. The backbone of the movement, Colonel Elliot continued, was the help of the medical profession, and, not least, of that part of it resident in health resorts of all kinds. From the medical bodies in the various health resorts an estimate of their claims to provide facilities for invalids would be obtained. These claims would be sorted, analysed, and codified by a competent committee. It would be useless for any one place to claim, like some quack medicine, to "cure all ills." Having obtained this information and codified it, the association hoped to make it available for both the doctor and his patient. On the highest medical authority it was known that in the British Isles there were exceptional facilities for treating a very large range of invalids and convalescents. Dr. R. FORTESCUE FOX said that, on a conservative estimate, at least two million persons were referred every year to the spas of Europe. In this country, apart from the spas, not less than ten million persons went each year to the sea. The spas and the coast were to-day of vital importance to this island population, which was mainly confined to the cities. The cult of the health resort, as old as civilization itself, represented a great branch of medical knowledge which was too much ignored. He spoke as a convinced believer in the efficacy of waters and climates, and after forty years he found an entirely new situation. There was now happily available a far better knowledge of these natural remedies than in his own early days. Much light had been shed upon the internal action of different kinds of waters on the body, and it had been shown that all the organs and tissues could be affected in one way or another simply by the external action of baths. New physiological studies of climate were being made showing that climate also was one of the most powerful of remedies in the prevention and cure of disease. This country was richly endowed in these respects. The spas of Great Britain were good, and the coast resorts were unsurpassed by any other country for number, variety, and health-giving properties. It was hoped to do something to develop these natural resources as a national asset.

The annual report on the work of the Royal (Dick) Veterinary College, Edinburgh, shows that the number of students attending courses of instruction is higher than that for any session during the last thirty years. As an index of the rapidity of evolution of veterinary education in this country it is pointed out that in less than ninety years the length of the curriculum has been more than doubled, with the result that the veterinary student of the future will have a period of training equal to that of the medical student.

Scotland

Edinburgh Municipal Hospitals

At a meeting of the Public Assistance Committee of Edinburgh Town Council on November 22nd Dr. John Guy, medical officer of health for the city, reported the arrangements that had been made for staffing the municipal hospitals recently taken over from the Poor Law authorities. Professors Wilkie, Ritchie, Johnstone, and McNeil had agreed to act respectively as directors of the units for surgery, medicine, midwifery, and diseases of children. The assistants appointed were as follows: surgery, Messrs. C. F. W. Illingworth, B. M. Dick, and David Band ; medicine, Dr. J. G. M'Crie, with Dr. A. C. P. Campbell as clinical tutor ; obstetrics, Dr. R. T. Thin ; diseases of children, Dr. T. Y. Finlay, with Dr. W. S. M. Craig as clinical tutor. Dr. Guy also stated that since these hospitals were not fully recognized by the General Nursing Council as training schools, arrangements had been made to send nurses for a time to other affiliated hospitals for part of their training. Some would be sent to the Royal Samaritan Hospital for Women in Glasgow, and others to the Dunfermline and West Fife Hospital, but as this accommodation was not sufficient it was proposed to approach the Royal Infirmary of Edinburgh with a proposal to take thirty of the probationers each year for one year's surgical training.

B.M.A. Concert in Edinburgh

A concert by the Edinburgh Medical Mission choir and orchestra, conducted by Dr. G. Keppie Paterson, was held in the hall of the British Medical Association, 7, Drumsheugh Gardens, Edinburgh, on November 25th. Dr. Keppie Paterson, who has been for many years a prominent member of the Association, having acted for twenty-three years as secretary of the Edinburgh Division, has taken a special interest in training this choir and orchestra, numbering over thirty individuals. A large audience assembled in the hall, which accommodates some 300 persons ; Dr. John D. Comrie, president of the Edinburgh Branch of the Association, was in the chair. The entertainment consisted of choral songs, which were rendered with great power and spirit, and vocal and instrumental solos and recitations. During an interval Dr. C. E. Douglas, chairman of the B.M.A. Charities Committee, explained the work of the medical charities of the Association, and, as an illustration of the amount of beneficial work carried out, instanced that last year they had provided help for no fewer than 1,272 individuals. At the close of the proceedings a grand piano and orchestral stands were presented to the Scottish House of the Association by Dr. Keppie Paterson, who said that he had been induced to offer this gift with a view to encouraging musical talent and fostering opportunities for social intercourse among Scottish members, and also to form a memento of his long connexion with the Association. The gift was accepted by Dr. D. Elliot Dickson, chairman of the Scottish Committee, who thanked Dr. Keppie Paterson for his great generosity.

Serum Treatment of Pneumonia in Aberdeen

In his report for 1931 as medical officer of health for the city of Aberdeen, Dr. H. J. Rae makes further reference to the treatment of pneumonia by Felton's serum, which has been in operation at Woodend Hospital, Aberdeen, under the supervision of Professor Stanley Davidson. In November, 1931, the local general practitioners were circularized by the medical officer of health, and informed that the clinical value of the concentrated (Felton) antipneumococcal serum appeared now to have been definitely established, especially in Type I and Type II cases, when the treatment was instituted within three or four days of the onset of the disease, the dosage being adequately high. They were invited, therefore, to send cases of pneumonia to Woodend Hospital as early as possible, and even in the absence of definite physical signs if there were suspicious symptoms, such as a rigor and pain in the side. Cases proved not to be pneumonia would be dealt with appropriately. In actual practice previously at the hospital each alternate patient between the ages of 20 and 60 was given serum, provided that admission to hospital had occurred within the first five days of the disease, and that Type I or Type II of pneumococcal infection was present. In most of the serum-treated cases the condition seemed to be definitely improved after the injection ; the crisis usually followed quickly, and the mortality rate was definitely lowered. Remarkable benefit ensued as a result of serum administration in cases where there was a previous history of chronic chest illness, or of " gassing " during war service. In 1931 twenty-four cases of lobar pneumonia were treated with Felton's serum, as compared with twenty in 1930, and the treatment has been continued during the present year. Dr. Rae insists that in order that full benefit may be derived it is essential to make an early and accurate diagnosis, and to begin the injections immediately thereafter.

Physical Defect in Children

In his address, on November 10th, to the Edinburgh Branch of the National Council of Women on the subject of the physically defective child, Dr. G. J. Linklater said that there had recently been opened at Fairmilehead an up-to-date hospital designed to serve the south-east of Scotland. A complete scheme for the treatment of physically defective children would embrace not only an orthopaedic hospital on open-air lines with a staff of surgeons, nurses, masseurs, and gymnasts, but also curative workshops, after-care clinics, and teachers to continue education. Infantile paralysis and acute rheumatism which accounted for much invalidism among children, might ultimately be found to be in the list of preventable diseases. In the schools established in Scotland for physically defective children there were 470 pupils, including sixty-three cripples, forty-seven heart cases, and forty-five cases of rickets ; out of the 470, at least 281 were there through the results of preventable disease. Provision was also made by the education committees for the treatment of adenoids, dental caries, defective vision, running ears, and skin diseases, but there were other conditions less easy of definition, such as poor circulation, slight anaemia, headaches, tendency to colds or asthma, slight debility, etc. Children suffering in this way were not ill enough to be sent to special schools, and they made slow progress in the ordinary schools owing to frequent absences and the limited energy they possessed. With such physical defects there was the difficulty of maintaining normal growth, of fighting against the disease or defect, and of trying to keep up with more healthy children at school. The child could not reason out the cause, but he felt that the inherent desires for play and childish pleasures could not be fulfilled. The consequences of this might be either that he rebelled and became antagonistic towards life and grew up sour and embittered, or that he became resigned, was regarded as a child who never grumbled, although all initiative was stultified, and he grew up to fill the role of a dependant or subordinate. In some cases the psychological result was good ; the mind progressed more rapidly, so that the child became a thinker, one of the intellectuals of society. The cure in these cases of moderate physical defect was sometimes easy, sometimes difficult, but they all required patient investigation and treatment such as could be given at child guidance clinics. The child should have the chance of being born healthy, but next came the question of

diet. Many parents unfortunately were ignorant of the elements necessary for a growing child, while others could not afford them. In this matter the municipality could help, and in Edinburgh the Education Committee supplied over 5,000 meals daily without charge. Next in importance was a good home environment, where sound training, physical and psychological, was just as necessary as hygienic surroundings. The parent of to-day was more conversant with the fundamentals required to maintain health and prevent disease than the parent of half a century ago, but much required to be done, both in the matter of propaganda for the parents and instruction in hygiene for children still at school.

England and Wales

Typhoid Fever at Malton in Yorkshire

No notifications of enteric fever were received by the medical officer of health this year until the week ending October 15th, when there was one; in the succeeding weeks the numbers were 2, 77, 70, 72, 30, and 12 respectively, giving a total of 263 cases, of which 18 were fatal. The distribution of the patients was coterminous with that of the water supply, which is derived from a shallow well in the urban district. Bacteriological examination of the well water collected on October 26th revealed the presence of organisms of excremental origin, but the *B. typhosus* was not found. On October 26th Dr. Vernon Shaw, medical officer of the Ministry of Health, recommended: (1) sterilization of the water in bulk pending the substitution of an unpolluted supply, which was not then available; (2) the removal of all cases to hospital; (3) the offer by the local authority of typhoid vaccine inoculation to such residents as desired it; (4) a published recommendation that all drinking water should be boiled, pending such time as it could be sterilized in bulk. On the night of October 27th a chlorination plant delivering 2.5 parts per 1,000,000 was installed.

Investigation of the source of pollution resulted in the finding at the Public Assistance Institution of a young man of 23 who had been admitted on September 23rd suffering from "fever and diarrhoea," and who since September 26th had been regarded as probably suffering from typhoid fever, a tentative diagnosis which was confirmed by a positive agglutination reaction on October 9th. On examination the drains from the institution were found to have been fractured for some little time, and the bulk of the sewage was escaping subterraneously at a point 230 yards from the public well, but nearer to the pumping station and to the pipe line between it and the well. Primary cases ceased to be notified about November 19th, exactly three weeks from the institution of chlorination. In the last completed week (November 26th) the cases notified were 12, as compared with more than 70 per week at the height of the epidemic. Owing to the fact that the Malton Urban District Council has no isolation accommodation of its own, it became necessary to isolate the patients in various hospitals in the neighbourhood, including the Cottage Hospital at Malton, the fever hospitals at York, Driffield, Scarborough, Leeds, Darlington, Northallerton, Great Ouseburn, and Thirsk.

Douty X-Ray Clinic at Cambridge

At the opening of the Douty *X*-Ray Clinic at Addenbrooke's Hospital, Cambridge, on November 25th (a description of which was given in our last issue at page 984), Sir Humphry Rolleston expressed gratitude to the anonymous donor who had presented the clinic as a memorial to Dr. Edward Henry Douty, assistant surgeon to the gynaecological department of the hospital during the last decade of the last century. In a brief biographical sketch Sir Humphry paid an eloquent tribute to Douty as a man and a physician whose career had been shattered by the onset of serious lung disease. This compelled Douty, who "possessed more medical qualifications of a high order than any man of his time," to practise abroad. In 1909 Dr. Douty married Kathleen, third daughter of the late Sir Frederick Wills. Sir Humphrey Rolleston then referred to the trouble taken by Dr. Ff. Roberts, who had made himself thoroughly acquainted with the radiological methods adopted in France, Germany, and Austria. "You will agree," he said, "that the happy association of radiologist and architect has produced a clinic worthy of E. H. Douty's memory, of the generous donor, and of Cambridge." Dr. Roberts, before describing the various features of the clinic, made appreciative references to the architect, Mr. Keay, to Mr. Brignell, Dr. Cockroft, and to Mr. Hales. A letter of apology for absence was read from Professor Langdon Brown, who remarked that the clinic had the most modern and complete equipment of any institute of radiology he had seen in this country.

Royal Dental Hospital

The annual dinner of the staff and past and present students of the Royal Dental Hospital of London was held at the Dorchester Hotel on November 26th, with Professor W. H. Gilmour in the chair. In proposing the toast of "The Hospital and School," the chairman alluded to his own early association with the institution in Leicester Square, where he finished his curriculum in the early 'nineties. He congratulated the hospital on the work it was now doing, and especially upon the work of its mechanical laboratory and its orthodontic and other departments. Referring to the prospects of a career in dentistry, Professor Gilmour said that up to the present he had had no newly qualified graduate in any year who had not been placed in practice before the following year's group was qualified. The profession of dentistry was the last to feel the great draught of depression, and he believed that when the period of prosperity returned it would be the first to feel its effects. He gave it as his opinion that with regard to the operative and restorative measures adopted for the preservation of teeth, the operators of forty years ago were superior to those of to-day. While operative and palliative measures would probably occupy most of the time of those present who were newly entering upon their career, a day would come when that part of dental work would assume a smaller importance as against the giving of advice with regard to food and the biochemical side of practice generally. Mr. H. Stobie, the dean of the school, referred to changes which had taken place on the committee and staff during the year, and welcomed Dr. A. W. Oxford as the new chairman of the Committee of Management. He went on to refer to the recent decision not to admit any new women students to the school. Some misunderstanding had arisen with regard to this matter. The hospital and school authorities had not one word to say against women as students or as house officers; they had caused no difficulty as regards the discipline of the school, and no question of sex inferiority had entered into the matter. It was, he emphasized, purely a domestic problem, which the hospital had had to face in its own way. The entry of new students this year was larger than for some years past; twenty-three new students had been admitted, and this, in view of the increasing competition from the provincial schools, was very satisfactory. In response to the toast of "The Visitors," proposed by Dr. Wilfred Fish, Sir Holburt Waring, President of the Royal College of Surgeons, said it had so happened that he had had to take a considerable part in the direction

of dental education in this country, as until recently he had been a member of the Dental Board from its inception. In this capacity he had had to visit every dental school in the country. There were many points about provincial schools which made comparison with a London school very difficult. In London there were five dental schools and one university, as well as a licensing body in the Royal College of Surgeons. The question had arisen as to the possibility of the Royal College of Surgeons granting some form of higher diploma in dentistry. Many discussions had taken place with representatives of the dental schools and the dental profession, but up to the present it had not been possible to formulate a plan which was acceptable both to the dental profession and to the College. He hoped that a higher diploma with a satisfactory appellation would be arrived at before long. In London some of the five undergraduate dental schools were struggling to carry on, while others were flourishing; yet none of them had made any provision for post-graduate instruction for qualified dentists. Sir Holburt believed there was room in London for a post-graduate school in dentistry. Further, in no London school was there a professor in a dental subject. He believed that dentistry must in future offer the opportunity of an academic career to a larger number of the members of the profession. The proceedings closed with the toast of "The Chairman," given by Mr. F. St. J. Steadman.

The dinner was preceded by the twenty-third annual clinical "At Home" at the hospital. During the morning demonstrations were given, including a routine operating session by Mr. H. Stobie at Charing Cross Hospital, and in the lecture theatre at Leicester Square films were shown illustrating various dental operations. In the afternoon clinical cases, general and orthodontic, were demonstrated, together with skiagrams, bacteriological slides and specimens, models of abnormalities of the teeth and jaws, and various apparatus. Dr. S. Blackman gave a lecture on the advantages of occlusal radiography in dentistry, and there were exhibitions of specimens of students' work.

Tuberculosis in Lancashire

In his annual report for 1931 Dr. G. Lissant Cox, central tuberculosis officer for the Lancashire County Council, calls attention to the close co-operation between general practitioners and the sanitary authorities, which is evidenced by the fact that 89 per cent. of new cases of tuberculosis were sent before notification to the tuberculosis officers for an opinion as to diagnosis. The death rate from pulmonary infection established a new low record, but it is feared that the continued decline may be checked by the prevailing adverse economic conditions. This form of the disease was more common among males than females, in respect both of numbers of cases and of deaths. The most fatal age period in females was 15 to 25, after which a progressive decline was discernible; in males the dangerous period was 45 to 55, although occasionally in recent years the age group 35 to 45 has furnished a higher mortality. With regard to non-pulmonary tuberculosis the most striking decline has occurred in the age group 0 to 5 years; in 1914 the deaths in this group totalled 286, whereas in 1931 there were only 69. This advance is attributed to the segregation and supervision of adult pulmonary cases, social measures, safeguarding of the milk supply, and the successful modern methods of treating children with non-pulmonary disease. The dispensary side of the work is closely correlated with the institutional organization; the aim of the county council is to provide in each area a pulmonary hospital with fifty to fifty-five beds for the diagnosis of observation cases, and the treatment of intermediate and advanced pulmonary cases near the homes of the patients, the consultant tuberculosis officer of the district acting as the visiting medical superintendent. Dr. G. Jessel contributes to the report a description of chronic pulmonary inflammatory conditions which simulate tuberculosis, and emphasizes the importance of *x*-ray examination in conjunction with careful clinical investigation. The article is illustrated with a useful series of radiographs. Dr. Allon Pask discusses the value of the Mantoux test, which he has found to be helpful in excluding or demonstrating the presence of tuberculosis in children, but of little value in the case of adults, a large percentage of whom give a positive reaction. As in previous reports, Dr. Lissant Cox deals at length with the treatment of tuberculosis by artificial light, which proved particularly satisfactory in disease of the skin, in adenitis with abscess formation and skin involvement, and in adenitis without softening. He points out that the first two of these conditions are usually refractory to other forms of treatment. Photographic illustrations are supplied of the improvement in various cases treated at dispensaries.

Forthcoming Radiology Congress

Under the auspices of the British Institute of Radiology a congress is to be held at the Central Hall, Westminster, from December 7th to 9th. An exhibition of radiological apparatus and material is also arranged. Sir George Newman is to open the congress on the first afternoon, and there will follow the thirteenth Mackenzie Davidson Memorial Lecture, by Dr. James Chadwick, F.R.S., whose subject is to be "The neutron." The following morning is to be devoted to a series of papers on physical and technical aspects of radiography, and the afternoon to two medical papers, one by Dr. N. S. Finzi, on late *x*-ray effects, and the other by Sir Harold Gillies, on plastic surgery in chronic radiodermatitis and radionecrosis. Later in the day the fifteenth Silvanus Thompson Memorial Lecture will be delivered by Viscount Lee of Fareham, who will speak on radium as a therapeutic agent and the case for national control. On Friday morning there are to be a series of papers on radiography and one on radiotherapeutics; in the afternoon the president of the Institute, Professor F. L. Hopwood, will deliver his address from the chair, and the congress will conclude with a dinner.

CORRESPONDENCE

Royal Medical Benevolent Fund

Christmas Gifts

SIR,—May I through your columns thank those of your readers who have so generously responded to my appeal, published by your courtesy on November 5th. Also I would like to thank the various societies and committees which have assisted in giving publicity to the appeal and have made collections at meetings in aid of our Christmas Gift Fund.

I regret to say that the amount already received is not sufficient to enable the committee to give either in amount or in number the Christmas gifts which it desires to distribute. It is of great concern to me to feel that some of our poor folks may have to go without the gift which they have had for so many years at Christmas time.

I ask whether those who have not already responded will help us between now and Christmas by forwarding a donation, however small, to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1, in order that we may be assured that some gift will be made to each one of our beneficiaries.—I am, etc.,

THOS. BARLOW,
President.

London, W., Nov. 28th.

Tuberculosis of the Larynx and Artificial Sunlight Treatment

SIR,—In last week's issue Sir Leonard Hill mentions a number of affections in which ultra-violet rays are efficacious. He states that, in place of saying anything about his experience with cases of tuberculosis, he appends a table "on the prevention and treatment of tuberculosis" by artificial light in the county of Lancaster. The table printed does not mention tuberculosis of the lungs or larynx. My communication in the *Journal* of November 19th dealt with tuberculosis of the larynx and its treatment with artificial light in sanatorium practice.—I am, etc.,

London, W.1, Nov. 28th. STCLAIR THOMSON.

Dysphagia in Pericarditis

SIR,—The account by Dr. W. J. Rutherfurd, in the *Journal* of November 19th (p. 919), of an unusual symptom in pericarditis raises a point of considerable interest. There is no doubt that dysphagia is a symptom in some cases of pericarditis, and may occur, as mentioned by one of the authorities cited by Dr. Rutherfurd, both in fibrinous and in serous effusions. The lists he gives might be extended, both of those who mention the symptom and of those who make no reference to it. Painful swallowing is seen in cases with fibrinous pericarditis, and obstruction to swallowing may occur in the presence of a large effusion. The frequency of the symptom is very difficult to estimate, as it may not be recorded in cases of pericarditis, not being a generally recognized symptom of the disease; or, when present, it may well be that the existence of pericarditis is not appreciated.

In his *Facts on the Heart* R. C. Cabot, analysing the clinical and post-mortem findings in 186 cases of pericarditis, makes the following observations: pain was recorded in only 14 per cent. of the cases, friction was recorded in only 21 per cent., the pericarditis was only diagnosed in life in 23 per cent., and only 10 per cent. of the effusions were recognized in life. Byrom Bramwell, in *Diseases of the Heart and Thoracic Aorta* (1884, p. 312), states: "When the effusion is very extensive the greatly distended pericardial sac may press upon the oesophagus and produce difficulty in swallowing (dysphagia) . . . aggravated by the recumbent and relieved by the sitting posture." In *Diseases of the Heart and Great Vessels* (fourth edition, 1873, p. 226), W. H. Walshe wrote: "I have never met with a case in which pressure of the distended pericardium on the oesophagus even appeared to have acted as an efficient mechanical cause of dysphagia." On page 228 of the same work we read: "Since I originally noticed dysphagia as a symptom of pericarditis in the first edition of this work I have seen some five or six additional very striking examples." He instances two cases showing symptoms of cerebral irritation, and adds: "Both cases confirm the opinion expressed in a former place, that the symptom is of purely dynamic mechanism." In a footnote Walshe says: "My statement appeared in the edition of 1851 (p. 443), and I believed it wholly novel. I have since learned, however, the symptom had been distinctly described by Testa in 1811."

In 1854, three years after the first edition of Walshe's book, William Stokes, in *The Diseases of the Heart and the Aorta*, devotes five pages to this symptom (pp. 53–58). In a footnote he states: "In the works which I possess on diseases of the heart (with the exception of Testa) I have not been able to find any notice of dysphagia as a symptom of inflammation of the pericardium or pleura." He quotes from Testa (*Delle Malattie del Cuore*, Bologna, 1811), who described four cases: one showed inability to swallow solids or liquids, and another "severe smarting in the oesophagus whenever the patient was tempted to swallow even a mouthful of water." In three of the cases post-mortem examination showed large pericardial effusion. Stokes concludes, after reference to his own cases, "that the symptom in question, however produced, is less a mechanical than a vital effect."

Careful clinical and post-mortem observations will help to decide both the frequency and the mechanism of dysphagia in pericarditis, whether of the painful or the obstructive type. Certain it is that both types occur, and that neither is a recent discovery.—I am, etc.,

Manchester, Nov. 21st. A. HILLYARD HOLMES.

Refraction Changes in Diabetes

SIR,—I have read with interest Mr. Affleck Greeves's article in your issue of November 26th (p. 963) on temporary changes in eye refraction in diabetes. I agree with all he says except that "the phenomenon is rare." I find such changes extremely common in cases which are rapidly de-sugarized by diet and insulin, and have formed the impression that they occur in some degree and for a short time in nearly 50 per cent. of such diabetics over 45 years of age. In them reduction of the blood sugar to normal unmasks a presbyopia which the myopic effect of hyperglycaemia had compensated. Younger patients show these changes much more rarely. I have not yet worked out the percentage incidence of such refractive changes, but have certainly noticed it in some 200 patients. So frequent is it that I always warn patients that it may occur; otherwise they are apt to think that insulin is making them blind!

Dr. Whittington has studied these refractive changes for some years in our diabetic patients at King's College Hospital, and our numbers are nearly sufficient to merit compilation, analysis, and publication. We expect these studies to confirm the idea that refractive changes are due to osmotic variations affecting the lens, but do not think they will throw light on the details of the mechanism. This would appear to lie more in the scope of experimental research than clinical observation.—I am, etc.,

London, W.1, Nov. 28th. R. D. LAWRENCE.

Research in Mental Disease

SIR,—It seems a pity that Dr. Atkin should adopt the attitude that the previous contributions upon this subject have contained any derision of pathological research into mental disease. Acrimony appears to have been definitely absent. He has now the satisfaction of having delivered, in his advancement of "another point of view," a forcible *quid pro quo*. But it is quite easy to agree with his condemnation of what I have already called a "hobby-horse" riding of hypotheses and alchemistic transmutation of theory into dogma.

Many, I am sure, will hope that it is indeed only "at times" any physician will rest content with a diagnosis (physical or psychical) without endeavouring to treat the condition. The "practical utility" lies in the accuracy of the diagnosis, and the one quoted by Dr. Atkin must, in common charity, be admitted to have called forth an exhaustive and most laudable exploration. As for the fathoming of the physical factors, my previous plea for an equality of approach demands that this should always be so. It is the existing inequality of approach which leads, for example, to the omission of that all-important word "apparently" in front of the statement beginning "the very same psychic conflicts," etc. Such assumptions of certainty are comparable to the influences which lead the lost explorer to go round in circles, and are obviously productive of the gropings among words of the precociously dogmatic in the vast field (or is it fields?) of the conscious and the unconscious.

Correlation of mind and body is one thing, conglomeration is another. I have recently been reminded of a catch-penny phrase, "Mind and body are one." Most of us learned at school that "one and one made two," and

attempts at denial led to an exposition of the close association of these two, though at times a pad of blotting-paper aided a dissociation.—I am, etc.,

County Mental Hospital, Newport, Nov. 28th. CHARLES DAVIES-JONES.

Pressure of Cerebro-spinal Fluid

SIR,—I write to draw attention to the infrequent reference, in case reports, to reasonably accurate readings of the pressure of cerebro-spinal fluid. A spinal manometer is simple to use, and, as pointed out by Greenfield (*Clinical Interpretation of Aids to Diagnosis*, 1930):

"the rate at which drops of fluid escape at lumbar puncture gives, at best, a fallacious, and at times an altogether erroneous, estimate of fluid pressure."

A case of cerebral tumour which recently came to necropsy showed, on lumbar puncture, a slowly dropping fluid, which rose quickly in the manometer to beyond the 400 mm. mark, while a day or two later a syphilitic produced a briskly running fluid, the pressure being normal at 170 mm.—I am, etc.,

Salford, Nov. 15th. R. T. COOKE, M.B., Ch.B.Ed.

Retinitis Pigmentosa

SIR,—In reply to Dr. Posel's letter in your issue of November 19th, may I state that I have treated three cases with menformon.

In two of them there was absolutely no improvement, either subjectively or objectively, and although the third "thought he could see better" after a course of injections I could find no improvement in vision and no increase in the visual fields, and the fundi remained unaltered.

Dr. Wibaut explains the rationale of his treatment by stating that retinitis pigmentosa is more frequent in men because they lack a female hormone, and by supplying this in the form of menformon the disease can be cured in some cases. I do not agree with Dr. Wibaut that retinitis pigmentosa is more common in men, at least to any great extent. From 1926 to 1931 thirty patients suffering from retinitis pigmentosa attended the Royal Westminster Ophthalmic Hospital; of these, sixteen were women and fourteen were men.

We are agreed that retinitis pigmentosa is a degeneration of nerve elements, whether primary, or secondary to degeneration of the choroidal vessels. It does not seem possible to me that we can hope to cure, or even improve, such a pathological process once it is established.—I am, etc.,

London, W.1, Nov. 21st. J. G. MILNER.

Radiology in Dentistry

SIR,—The opening paragraph of Dr. Brailsford's letter in your issue of November 26th suggests that he wishes his original paper to be taken as referring, not to the great body of dentists, but to an ignoble minority. I have re-read the paper, and have shown it to a medical man and to a layman, and none of us could read this interpretation into it. The paragraph I quoted, and which Dr. Brailsford implies was torn bleeding from its context, is a general statement implicating "the practising dental surgeon," and contains no restrictive qualification. So far from being toned down by the context it bears out only too well the general tenor of the paper.

The question of a second opinion when the patient's dentist has made a clinical and radiographic examination is a different matter, and few dentists would object to such a step provided that their own views were given due consideration in case of disagreement. The habit against which I protest is that of saying to the patient: "I suspect a septic focus; it may be your teeth. Yes, I dare say your dentist is a good one, but I want you to go to a radiologist for an independent diagnosis, and we can then get your dentist to extract any condemned teeth." This procedure is an extremely common one, as any dentist will tell Dr. Brailsford, and surely it amounts to "referring the patient to a radiologist over the dentist's head"?

Dr. Brailsford would appear to agree with me on one point—the need for clinical knowledge on the part of the radiologist. But in the same paragraph in which he does this he shows the cloven hoof: he actually advises me to accept unquestioningly the verdict of a radiologist whose diagnosis is so far at fault that he labels a living tooth "dead." I can only believe that he is convinced that the radiologist was right and that I was wrong on this point, although I was able to test the tooth for vitality and the radiologist was not. This, I fear, is his thesis in a nutshell.—I am, etc.,

London, W.1, Nov. 26th. NORMAN J. AINSWORTH.

Clinical Training

SIR,—Would you please allow me space to offer my thanks to Mr. H. S. Souttar for his recent magnificent address on the education of the medical student, published in your Educational Number on September 3rd.

It has been my lot to observe the metamorphosis of many newly qualified graduates during their term of hospital residentship, and I continue to be overwhelmed by the difference between the one-day and the one-year-old resident. It is not too much to say that the one-day resident, even though he be a gold medallist, is the most hopeless blob of a doctor, and yet, a year later, the same man is a shrewd and resourceful practitioner ready—perhaps too ready—to deal effectively with most ailments. That this happy transformation can occur in a year may be taken as a sign of merit in our system of education, but what of those students who do not become residents? Moreover, surely this gap between the sixth and seventh year trainee is too huge to be in proportion.

It is said that we follow a system of apprenticeship, but I have often pondered on the difference in the methods of education of the doctor and the nurse. Admittedly the aims are different, but a nurse on the day she receives her certificate—and for many days before—most certainly is a nurse, while the medical student on the proud day on which he is entitled to add those magical letters after his name, just as certainly is not a doctor. The reasons for this difference are not obscure. The nurse lives in hospital, becomes an integral part of it, and from the moment she dons her probationer's cap has practical and responsible work thrust upon her. If later she wishes to specialize in a particular branch of nursing, she goes to a special department or a special hospital. The student lives in a world of make-believe. The acute abdominal case he finds he has allotted to him was operated on at 11 o'clock the previous evening. His man with the septic leg was dressed by the nurse at 9 a.m., while he was still at lecture, and will not be done again till 2 p.m., when he will be learning how to ventilate the Houses of Parliament or may be assimilating the smell of the dried root of some plant, which years later he may, in his credulity, employ in ampoule form according to the directions supplied gratis by the manufacturing chemist. If he finds pus cells in a urine they must be confirmed by his resident, and so it goes on. During these most eager years of his life he is thwarted almost at every turn, and robbed of the responsibility his young manhood craves. Is it any wonder he turns more and more to his books; and if he

is wise he will do so and thus increase his chances of a gold medal.

Of the pre-clinical years it is not for me to speak. Possibly it is essential that for a month or two we can write a page on the morphology of the notochord of the amphioxus: I doubt it. If medical practice continues along its present lines and we are to keep faith with the public, it seems to me that every man who receives a licence to practise should on that same day be qualified to offer sound advice on the ailments native to his community and to treat the simpler of these, and that he should have confidence in his powers and knowledge of his limitations. If we cannot so train a man in six years, and at the same time retain the questing mind that Nature has endowed him with, then Heaven help us! It has become manifest in many quarters that the will for change is here. Let us not confuse true conservatism with inertia.—I am, etc.,

Australia, Oct. 11th. "ONE WHO HAS SUFFERED."

Aluminium and Health

SIR,—Dr. C. B. Heald's suggestion in your issue of November 12th that the question of chronic poisoning by aluminium should be investigated in a simple practical way is to be welcomed. Before applying his test, however, persons sensitive to aluminium poisoning (that is to say, patients who have been suffering from it for years) should first be subjected to a treatment which aims at ridding their bodies of the amount of the metal which has accumulated in them.

The signs and symptoms of an advanced case of chronic poisoning by aluminium can be classed under three distinct groups—namely, gastro-intestinal, nervous, and cutaneous. Although the first two groups would no doubt show a very marked improvement on being given food not prepared in aluminium kitchen utensils, such an improvement might still be explained by sceptical critics as being due to coincidences and the like.

I therefore suggest that, in addition to Dr. Heald's test, the regime outlined by me at the meeting of the Hampstead Division should be strictly applied to a number of those patients in whom the cutaneous manifestations of the poisoning, such as urticaria, cheiropompholyx, dysidrosis, infantile eczema, etc., predominate. A certain number of these cases, preferably those of long duration and advanced degree, in which different kinds of treatment conducted on other lines have hitherto proved unsuccessful, should be submitted to the regime described by me on previous occasions. This being mainly of a dietary nature, with strict avoidance of any harmful substance but without local applications, it would be important that the cases selected be kept as in-patients at a hospital and separated from others who are not given such a diet. There would be the advantage of their remaining under the full supervision and control of the hospital's own dermatologist. If with such treatment the majority of these patients should not be cured after about ten weeks, even though they may have been suffering for years, the theory that their dermatoses are due to chronic aluminium poisoning could be rejected.—I am, etc.,

London, N.W.6, Nov. 15th. LEO SPIRA.

The School Medical Service

SIR,—With reference to Dr. J. L. Newman's letter in the *Journal* of November 26th there is no doubt that closer co-operation between the school medical service and the hospitals would be mutually advantageous, and that post-graduate courses specially arranged for school doctors would be appreciated. At the same time I do not agree with Dr. Newman when he appears to suggest that the only experience of the school medical officer is derived from the examination of some ten normal children an hour. School clinics all over the country are daily thronged with children, either temporarily or permanently abnormal, who have been brought for advice as to treatment, and the list of defects and diseases which have to be diagnosed by the school doctor is a long and varied one. The special experience afforded in refraction work, treatment by ultra-violet radiation, and remedial exercises is particularly valuable. I am not aware that there is, or ever has been, any shortage of men and women of clinical ability in the school medical service.—I am, etc.,

PHILIP R. KEMP,
Assistant School Medical Officer,
Edgbaston, Nov. 26th. City of Birmingham.

Universities and Colleges

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

DIPLOMA IN PSYCHOLOGICAL MEDICINE (*with special knowledge of Psychiatry*).—S. Davies, Maeve Whelen.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The Bradshaw Lecture will be delivered in the theatre of the College, Lincoln's Inn Fields, by Professor G. E. Gask on Thursday, December 15th, at 5 p.m. The subject is "Experiences of the surgery of the sympathetic nervous system" (illustrated by patients). Fellows and Members are invited to attend; students and others will be admitted on presentation of their visiting cards.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have been approved at the examination indicated:

MASTERY OF MIDWIFERY.—H. Freeman, Doris E. P. Jolly, P. Kuhne.

The Services

ROYAL ARMY MEDICAL COLLEGE

PRIZE WINNERS

The War Office announces the following prize winners in the junior class of instruction for officers of the Royal Army Medical Corps and Indian Medical Service at the Royal Army Medical College, at the session which terminated on October 30th last:

Captain J. H. Crawford, M.R.C.S., L.R.C.P. (St. Mary's Hospital), I.M.S., Herbert Prize (highest aggregate), Ranald Martin Prize (Tropical Medicine). Lieutenant C. M. Marsden, M.B., B.S. (Melbourne University), R.A.M.C., First Montefiore Prize (Military Surgery). Lieutenant N. P. Breden, M.B., B.S. (Sydney University), R.A.M.C., Second Montefiore Prize (Military Surgery). Lieutenant T. M. R. Ahern, M.B., B.Ch. (Trinity College, Dublin), R.A.M.C., Marshall Webb Prize (Military Medical Administration). Lieutenant J. W. A. McIver, M.B., B.Ch. (Aberdeen University), R.A.M.C., Tulloch Memorial Prize (Pathology). Lieutenant C. J. H. Brink, M.B., B.Ch. (Witwatersrand University), I.M.S., Fayrer Memorial Prize (Pathology). Captain G. R. M. Apsey, M.R.C.S., L.R.C.P. (Guy's Hospital), I.M.S., Parkes Memorial Prize (Hygiene). Lieutenant G. W. Crimmin, M.R.C.S., L.R.C.P. (Cambridge University and St. Thomas's Hospital), R.A.M.C., De Chaumont Prize (Hygiene).

DEATHS IN THE SERVICES

Major Hawtrey William Browne, M.C., R.A.M.C., died suddenly at Amritsar on November 6th, aged 45. He was born on July 5th, 1887, and was educated at Trinity College, Dublin, where he graduated M.B., Ch.B., and B.A.O. in 1914. He entered the R.A.M.C. as lieutenant on September 29th, 1914, becoming captain on March 30th, 1918, and major on September 30th, 1926. He served through the war of 1914–18, was mentioned in dispatches in the *London Gazette* of January 10th, 1917, and received the Military Cross, and subsequently, on September 16th, 1918, a bar to the Cross.

REPORT OF COMMITTEE ON LOCAL EXPENDITURE

(ENGLAND AND WALES)

The report of the Committee on Local Expenditure,[1] issued last week, contains recommendations which, in conjunction with economies already in progress, are designed to secure a reduction of local expenditure within three years by at least thirty to forty million pounds below that of the year 1929–30. The committee consisted of fourteen members appointed by the London County Council and associations of local authorities, at the request of the Chancellor of the Exchequer last July. Its report is signed by the chairman, Sir William Ray, and all his thirteen colleagues, subject to certain personal reservations on specific points. It is emphasized at the outset that the recommendations are an expression of individual opinion, and they in no way commit the authorities appointing each member. It is also observed that the short time allowed for the work has forced the committee in some cases to indicate a field of investigation rather than conduct a comprehensive investigation itself. The recommendations, some of which are put forward as emergency measures of retrenchment, others as permanent methods of economy, include a number which more or less directly affect local health services. The most important of these may be briefly summarized as follows.

In general it is recommended that there should be a halt in legislation involving local authorities in fresh expenditure, and that methods should be found of extending the system of block grants to services still receiving percentage grants. In the review of education particular attention is given to the striking variation in the costs as between different areas in the special services—namely, the school medical service, special schools, the organization of physical training, evening play centres, nursery schools, and provision of meals. Local examination of expenditure under all of these heads is recommended, together with a detailed inquiry by the central authority into the costs and working of the school medical service. Meanwhile, and pending this general inquiry, it is recommended more particularly that the variation in the cost of medical inspection should be investigated; that special inspection and treatment should not be limited to the time of the school session; that the number of routine medical inspections in secondary schools should be reduced to one, special inspections remaining as at present; that inquiry should be made where the proportion of operations for the removal of tonsils and adenoids is above the average in order to ascertain whether "the unusually high rate is justified by unusual incidence of disease"; and that cases in which hospitals charge different fees to different authorities for the same services should be reviewed—a task already begun by the Board of Education. The committee favours the elaboration of schedules for the guidance of school dentists, indicating what points should be looked to in dental inspection and the different lines of treatment that should be adopted in different circumstances.

With regard to special schools the committee recommends consideration of the possibility of closing some deaf and blind residential schools with a view to reducing the average cost per head. Attention is called to the high cost of educating the mentally deficient child in a special school, day or residential, and it is suggested that certifying medical officers acting under Section 55 (1) (*a*) of the Education Act, 1921, should bear in mind the provision now available for lower-grade children in reorganized schools as affording a less expensive alternative to education in a special school. Beyond this, further development in the provision for mentally deficient children in special schools should be postponed. Attention is called to the variation in the proportion of the cost of treatment and meals which is recovered by public authorities, with a view to obtaining an increase in the amount so recovered. Special researches, as distinct from compilations based on evidence obtained in the ordinary course of medical inspection and treatment, should not, in the opinion of the committee, be initiated without prior reference to the medical department of the Board of Education. The committee considered, but rejected, a recommendation for the general raising of the school age from 5 to 6 years on the ground that such a step would be detrimental to the health and welfare of the community.

Under the head of public health it is laid down in general that immediate inquiry should be made into building costs of institutions and steps taken to ensure that the standards determined should be observed; that consideration should be given to the possibility of establishing and applying standards of maintenance costs in institutions; that institutional treatment should be reserved for cases which cannot adequately be treated otherwise; that economy should be secured by the simplification and standardization of hospital supplies and by central purchasing, and that persons able to pay should, as a rule, be required to contribute, according to their ability, to the costs of the services provided. Special attention is directed to the use which might be made of comparative statements of costs in securing efficient and economic administration. With regard to the sanitary services, recommendations are made for the extension of co-operation between neighbouring authorities in the work of sewerage and sewage disposal and the extension of costing systems in connexion with sewage disposal works, refuse collection and disposal, and street cleansing. The cost of collecting trade refuse should be made a charge on the traders concerned. Economies should be effected in the maintenance of parks, pleasure grounds, and open spaces, and of baths and washhouses, where the scale of charges should be reviewed. Co-operation between neighbouring authorities is again urged in connexion with infectious diseases hospitals, and it is suggested that more effective action should be taken under Subsection 3 (*a*) of Section 63 of the Local Government Act, 1929. Reference is made to the *Report on some Administrative Aspects of Scarlet Fever* issued by the Ministry of Health in 1927, the adoption of which would, in the opinion of the committee, secure annual savings of the order of £120,000. The committee holds that the routine period of isolation of uncomplicated cases of scarlet fever is in many districts longer than is necessary, and that the practice of terminal disinfection "has often little medical value, and should be reconsidered by local authorities."

The committee considers the standards of accommodation in mental hospitals required by the Board of Control should be modified to secure economy, and sanction should be refused to schemes of local authorities which exceed the standards so modified. Apart from this, mental hospitals should be reserved for persons in need of mental treatment. Attention should be given to the financial side of occupational therapy. In the matter of financial control visiting committees should be placed on the same footing as any other committee of the council. Special attention is called to the increasing cost of the mental deficiency service. The committee finds much of the provision recommended by the Board of Control to be of a standard disproportionate to the cost of maintaining the same number of productive fit persons, and suggests revision and simplification of these standards and, in particular, less elaborate classification. It is not satisfied that the figures given by the Wood Committee justify the requirement that local authorities should provide institutional accommodation on a scale much in advance of the actual ascertainment of defectives, and suggests greater caution before deciding that a person is mentally defective. The committee also suggests that full use should be made of the system of securing employment for higher-grade defectives in domestic service or otherwise, under guardianship. Other recommendations are that more discrimination should be exercised in the choice of cases of tuberculosis for residential treatment, particularly in the intermediate stages of the disease and in children; that, where possible, venereal disease clinics should have separate sessions at which charges may be made for treatment; and that, in connexion with maternity and child welfare services, there should be some restriction of the employment of health visitors, a reduction in the maintenance costs in maternity homes, more discrimination in the assistance given at clinics, more co-ordination of the work of ante-natal clinics

[1] *Report of the Committee on Local Expenditure* (*England and Wales*). Cmd. 4200. London: H.M. Stationery Office. 1932. (2s. 6d. net.)

with maternity work, and some restriction in the work undertaken by day nurseries.

Under the head of public assistance, considerable attention is devoted to the question of institutional relief, and it is recommended that the appropriation of Poor Law institutions as public health hospitals should not, in present financial conditions, be unduly pressed. Approval is given to the use of Poor Law institutions, set free by reorganization, for the accommodation of lower-grade mental defectives, but here, again, the committee desires to see a reduction of the standards imposed by the Board of Control, and delay in the concentration of high-grade mental defectives in specialized institutions. In regard to salaries and wages, the specific recommendations of the committee are confined to the remuneration of teachers and the police, but the general recommendation for a review of salaries, more particularly of "highly paid officers," and of the possibility of lengthening incremental scales, has an obvious application to members of public health services.

Scottish Committee's Report

The report of the Scottish Committee on Local Expenditure, which sat under the chairmanship of Lord Lovat, has submitted two recommendations in connexion with public health services. These are: that the Department of Health should conduct periodical surveys of the various hospitals in Scotland from the medical, financial, and administrative standpoints, and circulate the results of its investigation to the local authorities with a view to stimulating economy; and that an independent inquiry into the whole subject of public health from every standpoint—health, social, administrative, and financial—should be instituted immediately. In connexion with lunacy and mental deficiency services, the committee observes that a return to the practice of boarding-out is necessary if economy is to be effected.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons has this week finished the debate on the Address, and gone into Committee on the London Passenger Transport Bill. A Slaughter of Animals Bill was presented by Colonel Moore on November 25th, and an Exportation of Horses Bill by Miss Horsburgh on the same day. On November 29th Mr. Banfield presented a Bill to prohibit nightwork in bakehouses, and Sir Robert Gower a Bill to prohibit the vivisection of dogs.

On November 28th Mr. H. Williams presented a Bill to provide for the humane and scientific slaughter of bovine animals.

Mr. CHAMBERLAIN stated on November 29th that the position under the Medicine Stamp Acts was receiving careful consideration.

The Typhoid Fever Outbreak in Yorkshire

Replying to Mr. Price on November 24th, Sir HILTON YOUNG said that a specially qualified medical officer of the Ministry of Health had investigated the outbreaks of typhoid fever in Denby Dale and Malton, Yorkshire, on the spot since the Minister had first been informed of them, and had remained in close touch with the local authorities concerned. Sir Hilton Young was advised that in both places the infection was water-borne, and that the source of the infection had been traced and eliminated. Steps to procure a water supply free from risk of contamination were under consideration by the respective local authorities in close consultation with his Department. After full investigation an official report on the outbreaks would be published, and would be brought specially to the notice of the authorities concerned. He did not think a public inquiry would add anything useful, but he would consider a suggestion that the report should be furnished to other local authorities to enable preventive measures to be adopted.

On November 29th, in reply to Mr. Turton, Sir HILTON YOUNG said the outbreak had followed a course characteristic of outbreaks due to such causes. A small number of secondary cases were still being notified among persons who were nursing, or were otherwise intimately associated with, primary cases before the latter were removed to hospital. Up to and including November 26th the total number of cases was 265, of which 18 were fatal. The daily notifications during the last week of that period were 2, 6, 0, 2, 0, 0, and 2 respectively. With regard to the second part of Mr. Turton's question (which was whether, in the view of the medical authorities, it was now, or had been at any time, dangerous for anyone to visit the town or to buy or consume goods produced, manufactured, or offered for sale in the town), the Minister said he was advised that the cause of the outbreak was a polluted water supply. The special danger from the water was removed on October 27th, and there was no evidence that at any time any article of food (other than water) or any article of commerce shared in the conveyance of infection.

Mr. TURTON asked whether the Minister was aware that there existed a virtual boycott of the town because people were afraid to visit it or buy goods at it; and would he see that the facts he had stated would be published in the locality.

Sir E. HILTON YOUNG: I have no doubt that the answer I have given will secure that purpose.

Cancer of the Lung: Increase in Certified Deaths

Sir HILTON YOUNG, replying to Sir A. Samuel on November 28th, said that no figures were available as to the incidence of cancer, but the mortality statistics showed an increase in recent years in the number of deaths attributed by medical certificate to cancer of the lung. He was advised that a proportion of this increase might be assigned to improved means of diagnosis. The various uses of coal-tar products in general, and the use of coal-tar on roads in particular, had been investigated as possible causes of cancer in the lung among the public and those employed in spraying roads with tar. These investigations were being continued. Prolonged inquiries would be necessary before any definite conclusions could be reached. He could not state the exact scope of the investigations without notice. Commander LOCKER-LAMPSON asked whether the increase in smoking was not one of the greatest contributory forces, and whether that also would be investigated. Sir HILTON YOUNG replied that he would not like to give a definite answer to that question.

Report of Radium Committee

On November 28th Sir E. GRAHAM-LITTLE asked the Minister of Health whether, in view of the large sums of public money placed in the hands of the Radium Trust and Commission, and in view of the public concern that the money should be expended to the best advantage, he would take steps to hasten the publication of the report of the technical committee appointed early this year by the Presidents of the Royal Colleges of Physicians and Surgeons. Sir HILTON YOUNG replied that the committee was not appointed by him. He did not think it would be proper for him to undertake to interfere with its procedure.

Injury to Children from Wood Splinters.—Mr. RAMSBOTTOM told Captain Cunningham-Reid, on November 24th, that he had been informed that there had been numerous cases, one fatal, of injury to scholars from wood splinters at the London County Council Elementary School, Barrow Hill Road, St. John's Wood. The matter was one for the London County Council, which was investigating it carefully. Before deciding whether there had been negligence, it would be better to await the result of the investigation.

Foot-and-mouth Disease Research Committee.—On November 28th Dr. ELLIOT, replying to Mr. Perkins, said that the Foot-and-mouth Disease Research Committee appointed in 1924 was still at work. During the last two years the committee had investigated questions of immunity, the susceptibility of small rodents, the identification of "carriers," the comparative value of virus of various strains, and of the different methods of sterilizing animal products. This work had contributed materially to knowledge of the disease. It was not yet possible to come to any definite conclusion concerning preventive treatment by inoculation, which was still in the experimental stage.

Obituary

ERNEST CLARKE, C.V.O., M.D., F.R.C.S.

Consulting Surgeon, Central London Ophthalmic Hospital

Mr. Ernest Clarke, whose death, on November 22nd, we announced last week, was the elder son of Henry Clarke, J.P., of Cannon Hall, Hampstead, and was born on July 21st, 1857. He first went to University College School, and then entered St. Bartholomew's Hospital Medical School in 1876 with an exhibition in science; and in January, 1879, entered Downing College, Cambridge, with a similar exhibition, but he transferred to London University, where he took the M.B. in 1881 and the M.D. in 1885. The M.R.C.S. he obtained in 1880. He resumed relations with Downing College in 1904, and in 1928 was elected to an honorary Fellowship. During the whole of this latter period he took a great interest in Downing, to which he was a frequent and generous benefactor. It must suffice here to mention the gift of an exhibition for three years, the organ which he has left for the new college chapel and is now in the hall, generous contributions to the building, and handsome gifts of plate to the college association, of which he had been president, to the boat club and the Griffins Club, of which he was an honorary member.

Ernest Clarke was house-surgeon and assistant administrator of anaesthetics at St. Bartholomew's Hospital for eighteen months, and his first publication dates from this period. It was a contribution to the Abernethian Society in 1882, and is a review of the anaesthetics administered at St. Bartholomew's for the years 1875–81. This paper shows the lucidity of argument and clearness of expression which characterize his later publications. After this period at St. Bartholomew's he settled in Blackheath and soon obtained a large practice, but he had always been attracted by ophthalmology. In 1883 he was elected surgeon to the Central London Ophthalmic Hospital, and in 1886 surgeon, and later ophthalmic surgeon, to the Miller General Hospital. He then determined to devote himself entirely to ophthalmology, and, relinquishing his practice in Blackheath, he came to Chandos Street and commenced a singularly successful career. He furnished very material help in the foundation of the Freemasons' Hospital, and became its first ophthalmic surgeon. In 1894 he obtained the F.R.C.S.Eng.

He became a member of the Ophthalmological Society of the United Kingdom in 1885, was a member of its council 1893–6, and a vice-president 1910–12. He was a member of the council of the Section of Ophthalmology of the Royal Society of Medicine 1913–16, a vice-president 1925–6, and president of the Section 1926–8. He contributed much to both of the Ophthalmological Societies. In 1892 appeared his first small book on *Eyestrain* (*commonly called Asthenopia*). This showed the tendency towards which his work in ophthalmology was leading him. He had always been a student and a great admirer of the work of Donders (incidentally, he was a first-rate Dutch scholar), and in 1903 appeared the first edition of his book, *The Errors of Accommodation and Refraction of the Eye*. This met with immediate success and ran through many editions, becoming the standard work on this subject. The fifth edition appeared in 1924, and was reprinted in 1929. He wrote the article on treatment of errors of refraction in the Latham-English *System of Medicine*, and in 1913, at the seventeenth International Medical Congress, he read a paper representing the work of many years on the "Range of accommodation at various ages." In 1914 he published a small work on *Problems in the Accommodation and Refraction of the Eye*, a brief review of the work of Donders and the progress made during the last fifty years. In the preface he states: "Donders's classical treatise was published first in English [it was never published in Dutch], and, as a very small return compliment, this little book has been published first in Dutch." Early in his career he had translated and edited Haab's *Atlas of Ophthalmoscopy*, and in 1931 he produced an *Atlas of Ophthalmoscopy for the Physician*, which has been much appreciated. His last contribution to ophthalmology was a paper read this year at the Section of Ophthalmology of the Royal Society of Medicine on Tay's choroiditis. During the war he acted as ophthalmic surgeon to the R.A.F. Hospital, the Masonic War Hospital, the King George Hospital, and the Queen Alexandra Hospital for Officers.

Ernest Clarke was a man of wide human sympathies, a brilliant conversationalist, and had a very extensive range of interests. As a young man, in company with a well-known clergyman, he visited Ober-Ammergau, and in the following winter these two toured the surroundings of London holding lecture meetings. The clergyman did the talking and Ernest Clarke did the pictures. They succeeded in collecting £1,000, which was divided among the eye hospitals. Clarke was a keen Freemason, belonging to a large number of branches of the Order. He was a Founder and a Past Master of Rahere Lodge and its treasurer for twenty-one years, and at his death was treasurer-nominate of Mark Grand Lodge, and took a keen and practical interest in all its charitable work. He was a member of the committee of management of the Royal Medical Benevolent Fund, to which he rendered very material assistance. He was a life member of the Royal Institution since 1896. He served as a "visitor" for three years and was three times elected to the board of managers, the last occasion being in the spring of this year. He was a Commander of the Order of St. John of Jerusalem, and was made a C.V.O. in 1926. He was a skilled musician, and had built himself an organ in his house in Chandos Street.

Dr. LEONARD WILLIAMS writes:

A short time ago a bishop was reported to have said that the essentials of human happiness were to be found in the combination of three ingredients—namely, congenial work, money enough to guard against financial anxiety, and someone to love. Of these it may be claimed for Ernest Clarke that he had the first and the last in full measure, and the other in a large sufficiency. The word "congenial" hardly expresses his attitude towards his work. He was an enthusiast for ophthalmology in all its branches, more especially for that branch which he had made his own—namely, the correction of small errors of refraction. His enthusiasm for everything connected with this work knew no bounds, and it was maintained with never-slackening fervour until the very end. Within certain reasonable limits he could always bring himself and his patient to believe that accurate visual correction was the key to the most baffling problems. In the matter of someone to love Ernest Clarke was equally fortunate. An unusually happy marriage brought him children who were devoted to him, and sons-in-law of whom he was proud. He was a paragon husband and a model parent. To the bishop's three ingredients I should personally add two more—namely, good health and a sense of humour. Ernest Clarke's health during the last few years certainly left much to be desired, but for the greater part of his striving time he was strong and resistant. The disabilities which afflicted him latterly, giving rise to much pain and inconvenience, were endured with the uncomplaining stoicism which was rather a surprising quality in one of his quick mercurial temperament. The saving grace of humour never deserted him. I have known it to come to his rescue on many occasions, when the slings and arrows of injustice and ingratitude were assailing him.

With all these qualities and blessings, added to brains, industry, and a high capacity for enjoyment, it is not surprising that Ernest Clarke did not want to die. And yet when the call came—with merciful rapidity—he accepted it with the meekness that is instinct in the spirit of the masonry of which he was so distinguished an ornament.

W. T. COLLIER, *M.C.*, D.M., F.R.C.P.

Physician, Radcliffe Infirmary, Oxford

The death, on November 22nd, of William Tregonwell Collier, at the early age of 43, has removed from Oxford a practitioner of great promise and one who was beginning to make himself a name in several ways. He was the son of Dr. William Collier, F.R.C.P., who was President of the British Medical Association at the Oxford Meeting in 1905. Educated at Mr. Lynam's school, near Oxford, at Rugby, where he was the head of the School House, and at Balliol College, Oxford, he came to University College Hospital, London, where he obtained the gold medal. After qualification he entered the R.A.M.C. in 1915, and was drafted to Cairo. He was with the Imperial Camel Corps at the second battle of Gaza, when he was wounded. For his services in that action he received the M.C., and was mentioned in dispatches. On demobilization he took, in 1920, the M.R.C.P., and began practice in Oxford. He was elected an assistant physician to the Radcliffe Infirmary in 1921, and in that capacity acted as assistant to the Regius Professor of Medicine. He took the D.M. (Oxford) in 1923. In 1931 he was elected a physician in charge of beds at the Radcliffe Infirmary, and in 1932 he became a Fellow of the Royal College of Physicians.

He was interested in all branches of clinical medicine—especially diabetes—and continued to work in the pathological laboratory of the hospital on morbid anatomy and clinical pathology. The results of his experience and laboratory work were the subject of contributions to medical literature from time to time. An old weakness of his right arm prevented him excelling in games, but he was a good climber, and spent most of his holidays either in Cumberland or in Switzerland. Dr. Collier was a loyal colleague, and created a sense of trust in those with whom he came into contact. He was especially beloved by his patients, for whom no exertions appeared irksome or too great in any matter which concerned their welfare. He was very quiet in demeanour, but his friends knew him as one with a keen sense of humour. In addition to medicine and pathology he was interested in social work, and as president of the Balliol Boys' Club was a true friend to many a boy who continued to hold him in affectionate regard. He leaves a widow and two sons.

[The photograph reproduced is by Gillman and Co., Oxford.]

SPENCER MORT, M.D., Ch.M., F.R.C.S.Ed.

Medical Superintendent, North Middlesex Hospital

Dr. Spencer Mort, who died suddenly on November 21st at the age of 52, received his medical education at the Universities of Glasgow, Paris, Dresden, Stockholm, Munich, and Amsterdam. At Glasgow he won the Rainey prize in anatomy and physiology, the McGunn research scholarship in surgery and bacteriology, the William Cullen medal in medicine, and the John Hunter medal in surgery. In 1903 he graduated M.B., Ch.B., with first-class honours, and was awarded the Brunton prize. He proceeded to the M.D. in 1913, in which year he also became F.R.C.S.Ed., and in 1922 he took the degree of Ch.M.Glas. He was also a Fellow of the Royal Society of Edinburgh. Dr. Mort was a member of the North Middlesex Division of the British Medical Association, and had been medical director of the North Middlesex County Hospital at Edmonton since 1910. During the war he held a commission as lieutenant-colonel R.A.M.C., and was appointed officer commanding and chief consulting surgeon of the special Military Surgical Hospital, which the War Office established at his institution in Edmonton.

J. R. K. writes: The death of Colonel Spencer Mort, at the North Middlesex Hospital, brings a great loss to the sphere of work to which he devoted himself with so great enterprise and distinction. Under his direction this hospital expanded, kept abreast with every advance, especially in surgery, and, later, in radium therapy and research. After a brilliant career at the University of Glasgow, Mort studied at many Continental clinics, became assistant professor of surgery at Glasgow, and twenty-two years ago was appointed medical superintendent and surgical director at Edmonton. The annual reports of that hospital provide a record of his great endeavour and unique success. But to Glasgow men who knew Spencer Mort his professional brilliance was only second to his personality. His heart was as mellow and true as the notes from his flute. As one who has known him since he was a very small boy at Allan Glen's School, Glasgow, I would offer my tribute to the memory of our friend. We think of his very early days when he was contributing homely little verses to the school magazine, of his university medals, of his research work by the side of our great teacher Sir William Macewen, and of his going to London.

Medical News

The seventieth annual meeting of the Royal Surgical Aid Society will be held at the Mansion House, London, on Monday, December 5th; the Lord Mayor will take the chair at 4 p.m.

As already announced the opening ceremony at the house of the British College of Obstetricians and Gynaecologists (58, Queen Anne Street, W.) will be performed by H.R.H. the Duchess of York on Monday, December 5th, at 3 p.m. The annual dinner of the College will be held on the evening of the same day at Grosvenor House, Park Lane, at 7.30 for 8 p.m.

On December 7th, at the Home Office Industrial Museum, Horseferry Road, Westminster, S.W., Dr. Oscar Faber will read a paper before the Institution of Heating and Ventilating Engineers on examples of modern heating, ventilating, and electrical installations. The meeting begins at 7 p.m., and is open to non-members.

A festival dinner in aid of the London Jewish Hospital, Stepney Green, will be held at the Park Lane Hotel, on December 15th, with Lord Reading in the chair.

At the meeting of the Executive Board of the Birmingham Hospital Centre on November 24th, it was announced that Sir William Morris, Bt., had made a gift of £52,000 towards the establishment of the centre, on the understanding that the first part would be begun in the new year. It was decided to proceed with the work forthwith on the site of 150 acres given by Cadbury Brothers.

The King has been pleased to approve of the Polar Medal in silver with clasp inscribed "Arctic 1930–31" being granted to the members of the British Arctic Air Route Expedition, 1930–31, including Surgeon Lieutenant E. W. Bingham, R.N.

Colonel Herbert Alexander Bruce was appointed Lieutenant-Governor of Ontario on October 25th. One of the best-known surgeons in Canada, Colonel Bruce is a native of Ontario, and graduated M.D.(Toronto) as a gold medallist in 1892. After doing post-graduate work in London, Paris, Berlin, and Vienna, and obtaining the diploma of F.R.C.S.Eng. in 1896, he returned to Toronto, and later became the professor of surgery in the university of that city. In 1915 he joined the C.A.M.C. expeditionary forces and later was appointed Inspector-General of the Canadian Medical Services and consulting surgeon to the British armies in France with the rank of Colonel A.M.S. Considerable interest was aroused by his publication, in 1919, of *Politics of the Canadian Army Medical Corps*. This was a reply to criticisms directed at the efforts he had made to reform that Service during the war. In recent years Colonel Bruce has devoted much time and interest to the subject of cancer research.

The Minister of Health has issued to local authorities the forms for making out the annual returns for 1932 required in respect of maternity and child welfare ; tuberculosis ; venereal diseases ; and hospital treatment. Certain minor modifications have been introduced into those relating to maternity and child welfare and hospital treatment. In the case of tuberculosis it is now necessary to include figures regarding instances discoverable only from the death returns. A request is made for the return of the forms as soon as possible after completion, and in any case not later than February 28th, 1933.

Recent memoranda issued by the Central Bureau of Hospital Information and obtainable from the director, 12, Grosvenor Crescent, London, S.W.1, include: No. 51 (maternity patients), No. 52 (tonsils and adenoids patients), and No. 53 (public assistance cases—general, medical, and surgical). Each deals with the financial arrangements between local authorities and voluntary hospitals for the treatment of these cases. Other memoranda are: No. 54 (motor accident patients—a method of recovering the costs of their treatment), No. 55 (oil fuel), and No. 56 (insurance against third-party risks).

We have to acknowledge the receipt of a reprint of a lecture recently delivered at Birmingham University by Mr. C. J. Bond, F.R.C.S., entitled "Genetics in relation to public health and preventive medicine." This lecture, the third of a series of five William Withering (1932) Lectures on certain aspects of human biology, deals, among other problems, with mental deficiency.

Sir Aldo Castellani, Honorary K.C.M.G., M.D., F.R.C.P., has been appointed director-in-chief of the Ross Institute for Tropical Diseases, in succession to the late Sir Ronald Ross.

Obermed. Rat. Professor Adolf Barth, formerly director of the Clinic for Diseases of the Throat, Nose, and Ear at Leipzig, celebrated his eightieth birthday on November 26th.

Dr. Marchoux, professor at the Institut Pasteur, has been nominated a Grand Officer of the Legion of Honour.

An out-patient department for occupational diseases has been opened in the Hygienic Institute of the German University of Prague.

MEDICAL CURRICULUM CONFERENCE

In connexion with the Conference on the Medical Curriculum, which held its first meeting on December 1st, the Vice-Chancellor of the University of London entertained at luncheon at the University representatives of the Universities of Oxford, Cambridge, and London, the Royal College of Physicians of London, and the Royal College of Surgeons of England. Invitations were issued to the following: Sir Farquhar Buzzard, Professor W. Langdon Brown, Dr. A. E. Clark-Kennedy, Dr. Raymond Crawfurd, Professor Winifred Cullis, Lord Dawson of Penn, P.R.C.P., Dr. Edwin Deller, Professor H. R. Dean, Professor C. A. Lovatt Evans, Professor G. E. Gask, Dr. A. M. H. Gray, Mr. G. F. Goodchild, Mr. E. L. Pearce Gould, Sir Ewen Maclean, Dr. M. H. MacKeith, Mr. W. H. Ogilvie, Mr. G. W. Rossetti, Sir Holburt Waring, P.R.C.S., Professor W. Wright, Mr. S. J. Worsley.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are MUSEUM 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin* ; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh* ; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Treatment of Osteitis Deformans

Dr. R. ROLFE (Avonmouth) writes: Somewhere I saw the statement by an eminent authority that "recently some extraordinary successes with ultra-violet rays have been recorded in the treatment of osteitis deformans." As I have a case under my care and have always understood that treatment was of no avail, I shall be very grateful if any of your readers can give me further information as to this or any other treatment for a very distressing ailment.

Anginal Attacks of Obscure Origin

Mr. R. A. R. WALLACE, F.R.C.S. (Bishop's Stortford) writes to ask if any readers have traced any connexion between "anginal" attacks and ethyl petrol. I have (he says) a patient, aged nearly 40, otherwise healthy, married, and of placid and good habits, who has developed anginal symptoms, for which I have kept him in bed a month, and even now the slight exertion of brushing his teeth will cause a cautionary ache in his chest. He had a coupé car with a leaky carburettor, and, with short runs, every time he started his car, got a good whiff of unburnt ethyl petrol. His blood pressure was 100 mm. Hg systolic, and now has risen to 130 mm. Has cervical sympathectomy been useful to this type of case?

Treatment of Erysipelas

Dr. ARTHUR GREENE (Norwich) writes with reference to Dr. E. T. Larkam's note (November 5th, p. 864): It may be useful to state that many years ago, when in general practice, I found it was practically always possible to stop the advance of erysipelas by the application of a solution of ichthyol in glycerin, as suggested by Dr. Larkam. No perchloride of iron was used.

A Suppository for Rectal Cancer

Dr. DUDLEY G. GREENFIELD (Rushden) writes: I have a patient who has suffered from constant tenesmus, sacral pain, and inability to sit down without much pain—due to inoperable carcinoma of the rectum. He has obtained so much relief from a suppository of benzocaine, 5 grains, and acetyl-salicylic acid, 10 grains, that I think it may be worth a trial in other similar cases.

Wanted: A Home

In response to the request from a medical man (published last week, page 995) for information about a suitable home for an old lady with paralysis agitans, we have received replies from sixty-three readers, and these have been forwarded to our correspondent.

Income Tax

Reduction in Salary

"W. A. H." holds a full-time appointment the salary for which has been reduced in 1932. Can he not claim some relief from assessment as for 1932-3 on the amount of his salary for the year to April, 1932?

*** No. The statute clearly requires the application of the previous year's basis in assessing the salary in such a

case. No claim for relief in respect of "loss" can be made either now or at the end of the year. The section dealing with such claims applies to actual losses—that is, where the expenses of the trade or profession exceeded the receipts.

Claim to Repayment

"Fifty Years a Member" has retired from practice, and the only income of himself and his wife now consists of dividends, etc., which are taxed at 5s. in the £ by deduction, and is less than £500 per year. Both he and his wife are over 65 years of age.

*** He can claim repayment of old age relief and personal allowance and reduced rate relief on such amount of income as may be taxable up to a maximum of £175. For instance, if the total income, all taxed at 5s., is £450, repayment will be due as follows:

"Old age relief"	1/5 of £450 = £90 at 5s.	= £22	10 0
Personal allowance	£150 at 5s.	= £37	10 0
Reduced rate relief	£175 at 2s.6d.	= £21	17 6
Total amount repayable for the year...		£81	17 6

Ship Surgeon : Uniform Expenses

"INQUIRER" took a post in August, 1931, as ship surgeon, and retained it for four months. The appointment necessitated an outlay of £25 for uniform. He is informed that the agreed standard allowance is £22 per annum, and that as he held the appointment for four months only £7 is all that can be allowed to him.

*** The original cost of uniform, etc., is strictly capital outlay, and therefore not allowable for income tax purposes. The allowance of £22 per annum is for the maintenance of the uniform, etc., and consequently, though on the facts the result is somewhat harsh, the authorities are correct in saying that only one-third of the annual allowance can be given. The alternative would be to allow the actual *maintenance* cost during the four months, which was presumably almost negligible.

Letting of Rooms over Surgery

"L. M." rents some premises for £80 per annum for use as a surgery, and lets three rooms to his assistant for 15s. a week. The inspector of taxes questions the propriety of deducting the whole of the rates on the premises as professional expenses.

*** "L. M." has two alternatives: he can either deduct the whole of the rent and rates and bring in the £39 a year as a receipt, or he can exclude the £39 from his receipts, but in that case can deduct only a proportion (say two-thirds) of the rent and rates. "L. M." has adopted the former course in effect, and we suggest that he adhere to it.

LETTERS, NOTES, ETC.

Caesarean Section

Dr. B. E. WALTERS STALLARD (consulting surgeon to the Herefordshire General Hospital) writes: With reference to Dr. Janet Gray's letter on Caesarean section in the *Journal* of November 19th (p. 952), my experience in India showed that osteomalacia is not invariably an indication. I was offered my first Caesarean by my chief at a "purdah" hospital; the woman was in labour, with such advanced disease that the outlet of the pelvis admitted only the index finger. Before the theatre was ready she had delivered herself, owing to the extreme softness of the bones.

Medical Jokes in "Punch"

The exhibition of prints depicting humorous situations between doctor and patient now in progress at *Punch* offices in Bouverie Street, E.C., was first arranged for the centenary celebrations of the Association this year, and was attended by many members and delegates. The selection begins in the middle of last century, and is brought down to the present day. Some of the earlier jokes are still appropriate nowadays; one, which appeared in 1869, concerns the treatment of nervous depression, and the legend runs: "It's very well to go down for six weeks into the country by yourself, to give up tobacco and stimulants, and to live the Whole Day, so to speak, in the Open Air, but all this will do you no good unless you cultivate a Cheerful Frame of Mind and take a Lively View of things." The picture shows the patient standing alone under an umbrella in a dripping landscape, gazing mournfully at a couple of ducks in a pond. Another unchanging grievance of the patient is chronicled in the same year: "'Medical attendance two-and-six'! Why, I attended *him* and had to wait two hours." Sixty years later George Morrow imagined for us an entertainment at which he has never assisted: "Competition Night at the Pharmaceutical Society," where competitors are deciphering the calligraphy of eminent members of the British Medical Association. For the most part Mr. Punch has treated our profession with kindliness and sympathy, and we look forward to his genial criticisms in the future.

Danger of Exhaust Fumes

The Automobile Association draws attention once more to the frequency of fatalities due to carbon monoxide poisoning from exhaust fumes. Motorists are urged to observe the following precautions. Avoid running an engine for longer than is absolutely necessary when a car or motor cycle is in an enclosed space. Never run an engine for warming or tuning-in in a garage unless the doors, windows, and other ventilators are open; generally it is advisable to warm or tune the engine in the open air. Finally, make sure that the exhaust system is in perfect condition and free from any leakage.

Research in Mental Disease

Dr. ALEXANDER CANNON (Colney Hatch, N.11) writes: I have read with interest the various letters in the *Journal* on this all-important topic. It appears to be overlooked that some of us are carrying out research in mental disease with very satisfactory results, through the use of hypnotism, waking suggestion, and reliable research endocrine products, tested in mouse units. To these may be added the value of *Cannabis indica* in producing greatly increased receptibility when most powerful suggestions can be made, and even post-*Cannabis indica* (hypnotic) suggestions can be carried out by the patient, who appears often so inaccessible, but is not quite so inaccessible as most people would imagine. Suicidal tendencies, obsessions, hallucinations, and even certain types of delusions can be (and are being) disposed of by hypnotic suggestion. All that is required of the physician is confidence in himself, patience, tact, and interest in his patients, which should surely be the qualities with which each doctor is endowed, or acquires in order to make himself proficient and successful in his calling.

"Medical Register": Office Edition

The Registrar of the General Medical Council writes: May I remind those who find it essential to know whether a practitioner is legally qualified or not that, in order to facilitate their work, the General Medical Council publishes an office edition of the *Medical Register*, printed on inexpensive paper and bound in boards, but containing precisely the same names and lists as the more expensive edition. It is issued from this office (44, Hallam Street, Portland Place, W.1) at a special charge of 10s. post free, but no copies can be supplied unless they are ordered and paid for before December 31st. The Council also issues each month a list of additions to and deletions from the *Register*, the charge for which will be furnished upon application.

Medical Art Calendar

Once more the publishing house of J. Philip Kruseman (Nassauplein 1 B, The Hague, Holland) has issued its annual Medical Art Calendar, price 7s. For each week of the year there is an excellent reproduction in sepia of an old Dutch master—and every picture tells a story. This calendar would make an acceptable Christmas present to a medical friend.

Messrs. Allen and Hanburys Ltd. (Bethnal Green, E.2) have issued a new (third) edition of *Medicamenta Recentia*, the primary object of which is to bring to the notice of medical practitioners the uses of this firm's special preparations. It also gives information on such subjects as diet in disease, poisoning, and the Dangerous Drugs Acts and Regulations, and blank pages are provided for clinical notes on special cases. A copy will be sent post free to any member of the medical profession on request.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 67, 68, 70, 71, 74, 75, and 76 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 72 and 73.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 287.

NATURALLY RICH

IN VITAMIN "D"

NUTRITIONAL ANÆMIA IN INFANCY

The Minister of Health draws attention in Circular No. 1290 (27th Oct., 1932) to the importance of the results of the investigations carried out under the auspices of the Medical Research Council on Nutritional Anæmia in Infancy (Medical Research Report No. 157 Mackay). In this Circular the Minister recommends all authorities responsible for the care of infants to give practical effect to the recommendations made as the result of these researches for the prevention and cure of Nutritional Anæmia. The Milk Food which was used exclusively in this extensive work, and which is still being recommended for this purpose is

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The exhibition of Hēmolac in the treatment of Nutritional Anæmia has now been definitely established. In addition it has been demonstrated that Hēmolac acts as a prophylactic against the common catarrhal infections of the respiratory and alimentary tracts.

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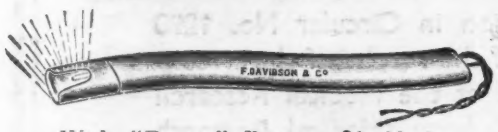

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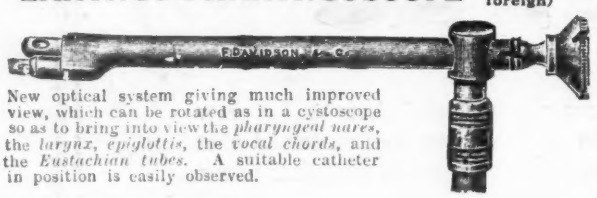

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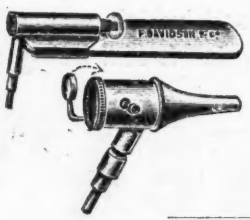

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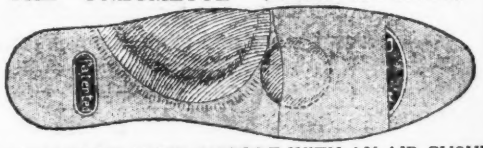

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